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ABSTRACT

In 1969 Hiram College, Hiram, Ohio, launched a new integrated curriculum that emphasized interdisciplinary studies and increased student freedom and responsibility. All traditional, discipline-oriented graduation requirements were eliminated in favor of new nondepartmental courses, more electives, and more individual faculty attention for freshmen. Results of the program have been highly encouraging. Among these results are: (1) there was significantly less disillusion and more end-of-freshman-year satisfaction with faculty, courses, advisers, and graduation requirements; (2) freshmen became more liberal and socially concerned under the new curriculum; (3) new-curriculum sophomores were better adapted to thinking introversion, theoretical orientation, complexity, and autonomy; (4) new-curriculum sophomores felt that they were better adjusted and less anxious than the old-curriculum sophomores; and (5) new-curriculum freshmen scored higher on English achievement, relative to their high school senior scores, than the old-curriculum group. (Author/HS)

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EVALUATION OF THE IMPACT OF A STUDENT-CENTERED FRESHMAN YEAR PROGRAM AT A 'TYPICAL' LIBERAL ARTS COLLEGE

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Regional Research Program

EVALUATION OF THE IMPACT OF A STUDENT-CENTERED FRESHMAN YEAR PROGRAM AT A 'TYPICAL' LIBERAL ARTS COLLEGE[1]

George A. Morgan[2]

In 1969 Hiram College launched a new integrated curriculum which emphasizes interdisciplinary studies and increased student freedom and responsibility. All traditional, discipline-oriented graduation requirements were eliminated in favor of new nondepartmental courses, more electives, and more individual faculty attention for freshmen.

During the first two years of the new program there was significantly less disillusion and more end of freshman year satisfaction with faculty, courses, advisers, and graduation requirements. Generally higher sophomore, senior and faculty satisfaction was also found.

Freshmen became more liberal and socially concerned during the first new curriculum year than under the old, but this was not replicated in the second year. New curriculum sophomores were higher than the old on thinking introversion, theoretical orientation, complexity, and autonomy. In addition, the new curriculum sophomores felt that they were better adjusted and less anxious than the old curriculum sophomores.

New curriculum freshmen scored higher on English achievement, relative to their high school senior scores, than the old curriculum group which had the presumed advantage of two terms of college English. In spite of the absence of disciplinary graduation requirements, the new curriculum sophomores scored as high as the old in five traditional academic areas.

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[1] This is the text of a final report to the Chicago Regional Office of Education which supported the research under grant number OEG-5-70-0018(509). Points of view or opinions stated herein do not necessarily represent official Office of Education position or policy. The work was also supported in part by planning and development grants from the National Endowment for the Humanities and the George Gund Foundation.

[2] At the time of the research the author was a faculty member and administrator at Hiram College. He is now a Health Scientist Administrator at the National Institute of Child Health and Human Development, Bethesda, Maryland.

Final Report

Project No. O-E-018
Grant No. OEG-5-70-0018(509)

Evaluation of the Impact of a Student-centered Freshman Year Program at a 'Typical' Liberal Arts College

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November 30, 1971

The research reported herein was performed pursuant to a grant with the Office of Education, U.S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgement in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

U.S. DEPARTMENT OF
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Regional Research Program

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PREFACE

Because this research project was embedded in the total process of planning and operating a major collegiate curricular change, the number of people and amount of work involved was enormous, even though the direct costs of the evaluation research were relatively small.

First, I would like to acknowledge the efforts of the Hiram College faculty, staff and students who spent many long hours planning the new curriculum and then putting it into action. I was fortunate enough to be a member of the faculty planning task force which worked out the general philosophy of the curriculum. I think that having been a member of this group gave me insight into the types of questions which should be asked in evaluating the program. I am especially indebted to the directors of the various components of the curriculum who helped me plan the evaluation of not only their aspects of the program, but also of the impact of the total curriculum. Special thanks must be given to President Elmer Jagow and Wendell Johnson, Dean of the College at the time of the planning of the program, who encouraged me to undertake a comprehensive and thorough evaluation of the program. Dr. Johnson was especially helpful in the preliminary planning of this evaluation project and in the writing of proposals to obtain support for the curriculum and its evaluation. The present Hiram College Dean, Robert MacDowell, offered encouragement and advice during the data gathering and write-up phase of the research project.

Second, I would like to acknowledge that this project has been supported not only by funds from Hiram College and the Office of Education, but also indirectly by substantial gifts and grants from the National Endowment for the Humanities, Mr. Kent Smith, and the George Gund Foundation. This latter support primarily was used for implementing the initial phases of the new curriculum and for evaluating its specific component parts.

Third, I would like to acknowledge the professional advice I have received. My Hiram psychology colleagues, Andrew Konick, Ralph Cebulla, and Rea Knight, gave me not only advice, but comfort when I grew frustrated. Ruth Churchill of Antioch College was an invaluable consultant during the planning and early data gathering phases. During the final phases of the project, I received extensive, valuable data analysis and statistical advice from Jim Schlesselman, a colleague in my new post at the National Institute of Child Health and Human Development. A number of friends have carefully read drafts of this manuscript, and/or earlier versions, and have given valuable editorial comments and feedback. Among those who have suffered the most in this respect are Lew Marcuson of Wilmington College and Jeanne Cebulla and Brainerd Stranahan of Hiram.

Fourth, over the three years which the project ran, I have had a number of efficient and faithful research assistants, namely Joyce Urbanowitz, Laura Licht, Anne Hilton, and Beverly Blair.

Finally, I wish to thank my wife, Hildegarde Morgan, who not only assisted me technically by making tables and figures, editing my writing, and typing drafts, but also gave me encouragement and support even when it seemed like the project would go on forever.

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INTRODUCTION

This research project is of both local and more general importance. It is of value to Hiram College because it is part of the evaluation of major curricular and social changes which affect the total life of the College and its students. It is of national importance because there is evidence that the type of integrated, yet individualized and student-centered, program initiated at Hiram anticipates a national trend and needs to be evaluated. Although the planning for the new Hiram curriculum was done with care over several years, thus preceding the current rash of student demands, the program is consistent with the cry for freedom and relevance. An interest in the Hiram curriculum and the evaluation of its impact has been expressed by a large number of individuals and institutions, including the National Endowment for the Humanities which partially supported the planning and development.

The project described in this report is the second phase of Hiram's comprehensive self-study. The first phase, which was completed several years ago, was a study of the College and its former, rather traditional, curriculum. The second phase, for which Office of Education funds were utilized, has been an evaluation of the effects of the first two years (1969-71) of the new program. The third phase will be a longer term evaluation of the whole program and a longitudinal study of its effects over at least four years.

Descriptive Summary of the New Hiram Program

After nearly two years of planning by the faculty curriculum Task Force, the faculty, students, and trustees of Hiram College approved, in October 1968, the major curricular revision which is the focus of this report. At that time the President appointed a Commission on Student Life, composed of representatives of all constituencies of the College, charged to recommend changes in social regulations which would be consistent with the philosophy underlying the new curriculum. The proposed changes, which were approved in the spring of 1969, gave students increased freedom and increased responsibility for their behavior.

The Hiram curriculum has several major objectives. First, we have encouraged students, starting in the freshman year, to take on more responsibility for planning and conducting their own education. We have reduced the number and prescriptiveness of graduation requirements, and provided the opportunity for individualized major areas of concentration. Although students have more freedom of choice than is typical at most colleges, freshmen are supported by close relationships with the faculty and a strong advisory system which is built into the course structure. Second, we have tried to make education more integrated and holistic by developing many topical and interdisciplinary courses and by encouraging cross-disciplinary majors. The college graduation requirements are all interdisciplinary in nature. Third, there is now an all-college emphasis on effective written communication and open, articulate discussion. Fourth, we have placed the rational discussion of contemporary society (its heritage, problems, and future) at the thematic center of the curriculum. Fifth, we have encouraged faculty to use new course content and new teaching approaches, to respond to students more individually, and to try cooperative teaching efforts. Finally, the focus of the Hiram curriculum has been shifted to the freshman year because of its importance in the development of student attitudes toward education and because we felt it was the weakest part of most college programs, including our previous one.

Since Hiram is on a 3-3 calendar, students usually take three concentrated courses each quarter. The following chart shows a typical freshman program during each of the first two years (1969-70 and 1970-71) of the new program.

Mid September	Fall Quarter	Winter Quarter	Spring Quarter
Institute	Colloquium I	Colloquium II	An Elective
	20th Century	20th Century	20th Century
	An Elective	An Elective	An Elective

The freshman year has been composed of four electives and six new curriculum courses. The latter were of three types--the Institute and Colloquia have been small in group size while the Twentieth Century Course has been common to the whole freshman class of 400 and, thus, large.

During the ten days before the opening of the regular school year, the Freshman Institute has provided all freshmen with an extended academic orientation to college and an intensive program of study and practice in written and oral communication skills. About one-third of the Hiram faculty members, representing most academic departments, took part, each working with a group of about thirteen students. One unusual feature of the Institute was the use of the film as a means of expression. Besides viewing and discussing several carefully chosen commercial films, each group of thirteen students planned and produced its own 8mm. movie. Both students and faculty agreed that the Institute has been very successful in meeting its goals.

When regular classes began in the fall, each freshman continued his small group learning experience, meeting in a Freshman Colloquium with eleven other freshmen and a professor-adviser. Student preferences, based on one-page descriptions of each proposed topic, were used to form the Colloquium groups. Among the sixty-eight Colloquium topics offered in 1970-71 were "Evolution and Modern Man," "History and Fiction," "Science and Human Involvement," "Modern Music: Noise Pollution or Art," and "Self and Society." Students selected two such Colloquia, one in the first quarter and another with a different professor and group in either the second or third quarter.

There has been general agreement among students and faculty that Colloquia are interesting, valuable, and effective in meeting the four common goals of: 1) improving communication skills, 2) improving advising, 3) dealing seriously with substantial academic topics, and 4) exposing students to humane, moral, and aesthetic concerns. Freshmen praised the informality of the Colloquia and suggested that there was better student participation in them than in most courses.

The Twentieth Century and Its Roots has been a year-long, fifteen credit-hour course for all freshmen. It was designed to help students critically examine, from many perspectives, the major issues of our society, e.g., the search for meaning, the uses of technology, the individual and the state, planet survival.

Three or four times a week the freshmen class met as a whole for lectures (often by outstanding visiting speakers), films, plays, debates, concerts, etc. Once or twice a week the freshmen met for discussion in small groups, led by upperclassmen or faculty. Students were encouraged to attend the sessions and read widely, but, with the exception of required position papers, they were free to get what they wanted out of the course because there were no exams and little penalty for lack of attendance.

The Twentieth Century Course has been the least successful and most problematic of the new freshman programs. However, student satisfaction with the course has been about the same as it was with the required courses under the old curriculum. Even many freshmen agreed that they did not respond as well to the freedom and the demand of personal responsibility as had been hoped by the planners of the course.

Our emphasis on the holistic, interdisciplinary approach to education has not been limited to these freshman courses. We have further implemented this philosophy by offering a variety of upperclass interdisciplinary courses, by giving some credit for active participation in a wide range of activities outside the usual course structure, and by encouraging students to develop individualized topical or multi-disciplinary major areas of concentration.[1]

Problem and Objectives

The general purpose of this research project was to measure the extent to which students under the new curriculum more closely meet certain goals than did students under the old, more traditional curriculum. As is usually the case, the faculty committee which developed the curriculum had many rather general and not easily tested goals in mind. However, it seems fair to say that the goals dealt more with the personal and attitudinal development of students and less with the acquisition of specific knowledge than seems generally implied by traditional curricula. While the curriculum was not based on any specific theory of education or student development, the committee was clearly influenced by the writings of men like Sanford (e.g., 1967), Freedman (e.g., 1967), and Katz (e.g., 1968).

Although there is considerable literature about curricular development and evaluation in the elementary and secondary schools (e.g., American Education Research Association, 1969), there seems to be rather little systematic research about the effects of the curriculum at the college level. In Sanford's classic source book, The American College, Katz and Sanford (1962) state, "There is, of course, a vast literature on the curriculum, but most of it has been concerned with descriptions of existing programs and with proposals for reform rather than with the demonstration of effects on students." The great curricular innovations including Hiram's own single course study plan of the 1930-50's, have not been accompanied by controlled observations that would permit comparisons or identify the effects of the curriculum. This latter task is very difficult, but it is one of the main aims of this research.

There have been numerous studies of the effects of particular courses (e.g., Jacob, 1957) or of particular techniques of teaching (e.g., McKeachie, 1962), but there have been few studies of the total curriculum. Katz and Sanford (1962) point out that this has been mainly due to the feeling that the effect of the curriculum on students is less than the influence of other factors. Feldman and Newcomb (1969) in their comprehensive review of the impact of college on students do not even deal with the effects of different types of curricula preferring instead to look at types of colleges, sequence of experiences, major fields, residence groupings, student culture, etc.

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[1] Additional information about the curriculum can be obtained from the Office of the Dean of the College, Hiram College, Hiram, Ohio 44234.

I suspect that there are some additional reasons which account for this lack of college level curriculum evaluation research. First, there are major methodological problems, e.g., Feldman and Newcomb, 1969, chapter 3. Second, there is the fact that in recent years there have been great similarities among colleges in curricula and graduation requirements. The exceptions (e.g., Sarah Lawrence, Bennington, Antioch, St. Johns) have been distinctive not only in curriculum, but perhaps even more so in the types of students they have attracted and enrolled. Thus, even when one of these colleges demonstrates a change in student characteristics which is due to an innovation, one might well question the applicability of the results to other colleges. Because Hiram has been much more typical of the large number of liberal arts colleges in the country, this research provides valuable evidence about the extent to which a marked curricular change can have effects on student development.

Hypotheses

The following hypotheses have been taken from the research proposal which was written just prior to the beginning of the new curriculum. They deal with the impact which the changed social and academic program was anticipated to have on students.

1) It was hypothesized that new curriculum students would have higher satisfaction with college than old curriculum students. Hiram, like many colleges (see Feldman and Newcomb, 1969) had found that students entered with very high expectations of satisfaction, which were not entirely fulfilled. At least part of this disillusion, sometimes called the "sophomore slump," was noted early in the freshman year.

In addition, more specific hypotheses were made about the effects of particular aspects of the new program on student satisfaction. For example, the colloquia with their close relationship between the student and his professor-adviser were predicted to help maintain the initially high expectations of satisfaction with "your adviser" and "the faculty." Likewise, the marked changes in social regulations were predicted to lead to higher year end satisfaction with "the administration."

2) It was hypothesized that there would be more change in certain social and intellectual attitudes under the new program than there had been under the old. For example, quite specific predictions were made about scores on the ETS College Student Questionnaire attitude scales. The new

program's emphasis on freedom was expected to produce a significantly greater change in the area of "family independence" and perhaps in "peer independence" as well. The Twentieth Century course and many of the Colloquia were predicted to lead to greater change in "social conscience" and "liberalism." It was hoped that the new curriculum would have a positive impact on "cultural sophistication." It also seemed possible that the program would lead to better "study habits" and that the activity units requirement would lead to more "extracurricular involvement," especially in the fine arts and in service oriented activities.

Less specific hypotheses were made about the scales on the Omnibus Personality Inventory. Students were expected to have stronger intellectual attitudes and values.

3) It was hypothesized that students would learn as much or more under this new curriculum, even when learning was defined rather narrowly in terms of traditional achievement tests. The combination of the Freshman Institute and the Colloquia was predicted to lead to better writing and to more open and lucid discussion of ideas (the latter hypothesis was not easily tested in this study). Specifically, freshman scores on the CEEB English Composition test were predicted to be no lower than during the last year of the old program when ten quarter hours of English Composition had been required of all freshmen. It was also predicted that sophomore achievement scores in humanities, social sciences, natural sciences, mathematics, and English would be as high for new curriculum students as they had been for students under Hiram's former more prescriptive curriculum.

4) Finally, it was hypothesized that the faculty would begin the first year of the new program with reserved optimism and would maintain, if not increase, their support for and satisfaction with the new curriculum.

METHOD

The central part of the study involves comparisons of changes during the freshman year for the last class to enter under the old curriculum and the first two to enter under the new program. Additional data provide a comparison of some sophomore scores of the last group to spend two years of college under the old curriculum with the first group to spend two years under the new curriculum.

Subjects

As implied above the main subjects of the project were students who entered Hiram College in 1967 and 1968 (old curriculum groups) and in 1969 and 1970 (new curriculum groups). There were about 350 entering students in each of these four classes. Some additional data were collected from faculty and seniors. More information about the numbers and the composition of groups given each instrument is presented in the following sections and in Appendix 1.

Data Collection Instruments

There were five main instruments used in the evaluation of the effects of the freshman year on the students. Appendix 1 provides more details about the instruments.

1) College Student Questionnaires. CSQ was developed by Educational Testing Service as a part of its Institutional Research Program. It comes in two forms; CSQ-1 is designed to be administered to entering students in the fall; and CSQ-2 is designed to be administered to students near the end of the academic year. The data provided deal primarily with biographical information, satisfaction, and attitudes. The attitudinal items are found on both forms so that changes can be studied. The CSQ data utilized in this study include: three satisfaction scales (faculty, administration, and students); five attitudinal scales (family independence, peer independence, liberalism, social conscience, and cultural sophistication); and three miscellaneous scales (high school motivation for grades, college study habits, and extracurricular involvement).

2) Satisfaction with Hiram Scale. This is a local rating scale used to

measure either expected satisfactions (ESHS) of entering students or actual later satisfactions (SHS). ESHS and SHS are identical except for the wording of the instructions. The basic scale which was used by both new and old curriculum students asked for a rating of from one (very dissatisfied) to six (very satisfied) of general satisfaction with each of the following aspects of Hiram College: "the administration," "the students," "the town and its location," "the graduation requirements," "the faculty," "your adviser," "the social life," "the physical facilities," and "your courses." Since the new curriculum began, an additional six items (one for each component) have been added.

3) Omnibus Personality Inventory - Form F. OPI is a standardized questionnaire designed to assess selected characteristics of human behavior, chiefly in the areas of normal ego-functioning and intellectual activity. The fourteen dimensions included in the OPI were chosen because of their relevance to academic activity or the help they would provide in understanding changes in student's attitudes, values, and interests. The OPI supplements the CSQ in that it provides a more in depth measure of dimensions which are expected to change more gradually as a result of the new curriculum.

4) College Board English Composition Exam. ENG is a 60 minute objective test designed to measure writing ability. The tests are old forms of the CEEB English Achievement tests which many Hiram students take as part of the admissions process, thus, providing the opportunity to study changes in English achievement during college.

5) Survey of College Achievement. The SCA is a short standardized college achievement test developed by Educational Testing Service. It measures knowledge in the areas of English composition, humanities, social sciences, natural sciences and mathematics. The test is designed to cover materials usually encompassed in the general graduation requirements of liberal arts colleges.

Design

Because the design is quite complex, a schematic representation of the study is given in Table 1. The abbreviations are those used in the preceeding section. The Office of Education support was used during the 1970-71 academic year to test sophomores (cohorts I & II, May 1971) and freshmen (cohorts III and IV, September 1970 and May 1971). Each cohort was composed of one half of the class. Further information about the design is provided in Appendix 1.

Table 1. Design of the Study

	FRESHMAN YEAR		SOPHOMORE YEAR
	September	May	May
OLD CURRICULUM	1968	1969	1969
Students entering in 1967 and 1968	CSQ1 ESHS	CSQ 2 SHS ENG	SCA SHS OPI
NEW CURRICULUM	1969	1970	1971
Students entering in 1969	I {SCA CSQ1 ESHS	I {CSQ 2 SHS	I {SCA SHS
	II {OPI ESHS	II {ENG SHS	II {OPI SHS
	1970	1971	
Students entering in 1970	III {CSQ 1 ESHS	III {CSQ 2 SHS	
	IV {OPI ESHS	IV {ENG SHS	

It is realized that there are certain difficulties with this type of design. The experimental (new curriculum) and control (old curriculum) groups were not formed by random selection and no doubt differ in some important ways. In addition, the groups were tested in different years and thus, cultural changes may have influenced the results.

The evaluation committee and the faculty considered the possibility of splitting the 1969 entering class into old and new requirement groups. This was ruled out for a number of reasons, some of which are related to design considerations. First, because of the attractiveness of the new program to students, it was felt that it would not be possible to persuade a large number, much less a random sample, of students to stay on the old requirements without the possibility of serious resentment. Second, since there was sure to be considerable interaction between groups there was the very real possibility of contamination. Fortunately, there is evidence the experimental and control groups were quite similar at entrance to Hiram. The relatively recent adoption of the program seems to have reduced any differences in input that may result in future years, due to the differential attractiveness of the program. We also have some appropriate covariates which enabled us to adjust for differences at entrance.

Of course, differences in the world situation and the general climate on American campuses may have influenced the results somewhat. It is hoped that the situations are approximately equivalent due to the short time span. It has also been possible to look at CSQ changes over this same period for some colleges which did not deliberately change their curricula.

As described above, the main focus of this project is to measure the impact of the program on freshmen and sophomores. However, in addition we gathered data concerning how advanced students and the faculty viewed the environment and the components of the program.

RESULTS

The results section is divided into four parts, i.e. comparisons of the old and new curricula with regard to: 1) a variety of information about entering freshmen, 2) the ratings of satisfaction, 3) scores on the attitude and value inventories, and 4) scores on the achievement tests.

Comparisons of Recent Entering Classes

Because we did not have corresponding input data, the comparisons of the old and new curriculum sophomores assumed that students who entered Hiram during the first two years of the new curriculum were quite similar to students who came to Hiram during the last years of the old curriculum.

In fact, there was considerable evidence which indicates a basic stability since about 1965. For example, the average SAT scores of entering freshmen have been relatively constant at about 525 to 550. Of the new students entering Hiram since the mid 1960's, about half have come from the top quarter of their high school classes, about ten percent have come from private schools, and about fifty percent have been from Ohio.

The College Student Questionnaire (CSQ 1) provided information about the backgrounds and attitudes of the 1968, 1969, and 1970 entering classes. There was little difference between the 1968 old curriculum freshmen and the 1969 group, which was the first to enter under the new program. The one apparently significant difference was a decrease on the social conscience scale which seems to have been either a temporary or chance phenomenon because the next year (1970) the mean was back up to the level of the first year.[2]

In addition to the above, Table 2 shows that students choosing Hiram for the second year of the new program were still quite similar to former entering students. However, there were increased differences with earlier classes. These 1970 freshmen were more independent from their families and more liberal.

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[2] Since about 300 comparisons have been made in this study, we would expect about fifteen "significant differences" at the five percent level by chance alone, even if there were no "real" differences. Therefore, some caution must be taken in interpreting the results, especially when p is between . 1 and .05. Appendix 2 provides further discussion of statistical and methodological considerations. It also provides means, standard deviations, and F values for all the results which follow.

Table 2. Comparisons of the 1968, 1969 and 1970 Entering Hiram Freshmen on the College Student Questionnaire Scale Scores[3]

	Curriculum			Comparisons		
	Old	New				
Scale	Fall 1968	Fall 1969	Fall 1970	1968 vs. 1969	1968 vs. 1970	1969 vs. 1970
N	274	301	177			
Family Independence	60	62	67	n.s.	**	*
Peer Independence	59	62	59	n.s.	n.s.	n.s.
Liberalism	61	63	71	n.s.	**	**
Social Conscience	59	53	60	*	n.s.	*
Cultural Sophistication	56	53	53	n.s.	n.s.	n.s.
Motivation for Grades	46	46	42	n.s.	n.s.	n.s.
Family Social Status	57	55	54	n.s.	n.s.	n.s.

n.s.: not significantly different
* : $p < .05$
** : $p < .01$

These differences were characteristic of the changing climate at many high schools and colleges, but it seems that the changes from 1969 to 1970 were larger than would have been expected and, thus, were probably partially because the new curriculum began attracting a somewhat different type of student.

There were no significant differences between the 1969 and 1970 entering freshmen on any of the fourteen scales of the Omnibus Personality Inventory (OPI). Since this instrument was designed to measure basic, relatively stable personality dimensions, these non significant results indicate that the two groups were quite alike in attitudes and values.

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[3] For ease of interpretation, the means of the raw scale scores have been converted to standard scores, using the revised (1968) institutional norms for all colleges and universities in the ETS sample. Standard scores have a mean of 50 and a standard deviation of 10. Thus, a score of 60 in Table 2 indicates that the Hiram mean was one standard deviation higher than the mean of the "average college" in the sample. Assuming that the other colleges' means were distributed normally around that of the "average college," Hiram's mean would be about the same as the college at the 84th percentile.

The expected satisfaction scores of the last group of freshmen (1968) to enter under the old curriculum and the first two groups (1969 and 1970) to enter under the new program were very similar. Table 3 gives these ratings. Notice that expectations were generally high at the beginning of all three years and that there were few differences which were significant at the one percent level. The major exceptions were that the new curriculum students expected to be more satisfied with the graduation requirements and their courses. In all three years new freshmen expected to be most satisfied with the faculty and least satisfied with the town and social life.

Table 3. Comparisons of 1968, 1969 and 1970 Entering Freshmen on Expected Satisfaction with Various Aspects of Hiram College (6.0 is very satisfied and 1.0 very dissatisfied)

	Curriculum			Comparisons		
	Old	New				
Satisfaction With	Fall 1968	Fall 1969	Fall 1970	1968 vs. 1969	1968 vs. 1970	1969 vs. 1970
N	298	297	319			
The faculty	5.19	5.21	5.34	n.s.	*	*
The administration	5.03	5.03	5.13	n.s.	n.s.	n.s.
The students	4.91	5.04	4.80	n.s.	n.s.	**
The town	4.10	4.35	4.32	*	*	n.s.
The requirements	4.38	4.96	4.89	**	**	n.s.
Your adviser	5.12	5.03	5.11	n.s.	n.s.	n.s.
The social life	4.19	4.46	4.38	**	*	n.s.
The physical facilities	5.04	5.12	5.08	n.s.	n.s.	n.s.
Your courses	4.76	5.03	5.02	**	**	n.s.

n.s. : not significant
* : $p < .05$
** : $p < .01$

In summary, there were some indications that by the second year the new curriculum began attracting more liberal and independent students. New curriculum students also seem to have had somewhat higher expectations for aspects of Hiram specifically related to the curricular change, e.g., courses and requirements. However, there seems to have been considerable similarity between the groups, which facilitated the making of valid comparisons of the impact of the old and new curricula.

Satisfaction

Table 4 summarizes the May (end of school year) ratings for the last freshman class to enter under the old curriculum (1968-1969) and the first two classes to enter under the new curriculum (1969-1970 and 1970-1971). It can be seen that new curriculum students ended their freshman year significantly more satisfied with most aspects of Hiram than did the old curriculum students. On the three clearly non-academic ratings (town, social life, and facilities) the differences are smaller and not consistently significant. There were few significant differences between the end of year freshman satisfaction scores for the two new curriculum groups, except that rating of the administration and facilities slipped back to the old curriculum level in the second year of the new program.

Table 4. Comparisons of Mean End of Freshman Year
Satisfaction with Hiram Ratings
(6.0 is very satisfied and 1.0 very dissatisfied)

	Curriculum			Comparisons		
	Old	New		1969	1969	1970
	May	May	May	vs.	vs.	vs.
Satisfaction With	1969	1970	1971	1970	1971	1971
N	246	307	316			
The faculty	4.32	5.04	5.08	**	**	n.s.
The administration	4.20	4.71	4.22	**	n.s.	**
The students	4.11	4.37	4.36	**	*	n.s.
The town	3.50	3.80	3.73	*	n.s.	n.s.
The requirements	4.28	4.78	4.69	**	**	n.s.
Your adviser	4.24	4.65	4.72	**	**	n.s.
The social life	3.54	3.73	3.74	n.s.	n.s.	n.s.
The physical facilities	4.38	4.62	4.30	*	n.s.	**
Your courses	3.87	4.56	4.50	**	**	n.s.

n.s. : not significant
* : $p < .05$
** : $p < .01$

Table 5 provides the spring ratings of the two new curriculum groups' satisfaction with the various components of the new program. Note that each of the aspects of the curriculum was rated relatively highly, except the Twentieth Century Course. Even that course was at about the same level as the rating of all courses had been under the old

Table 5. Comparisons of Mean End of Freshman Year Satisfaction Ratings with the Components of the New Curriculum (6.0 is very satisfied and 1.0 very dissatisfied)

Satisfaction	May 1970	May 1971	Comparisons May 1970 vs. May 1971
N	143	273	
The Institute	4.52	4.66	n.s.
The Colloquia	4.38	4.78	**
The 20th C. Course	3.81	3.53	*
Activity Units	4.08	4.45	**
Interdisciplinary Courses	4.43	4.65	*
Area of Concentration	4.84	5.01	n.s.

n.s. : not significant
* : p<.05
** : p<.01

curriculum (see Table 4). In the second year, the Colloquia, Activity Units, and Interdisciplinary Courses were all better received by freshmen, but the Twentieth Century Course did not rate even as well as it had the first year.

Table 6 compares the changes in satisfaction ratings for the

Table 6. Comparison of the Changes in Mean Freshman Satisfaction Ratings from September to May

	Curriculum			Comparison of changes		
	Old	New		68-69	68-69	69-70
	Change	Change	Change	vs.	vs.	vs.
Satisfaction With	68-69	69-70	70-71	69-70	70-71	70-71
N	228	247	225			
The faculty	-.91	-.12	-.26	**	**	n.s.
The administration	-.90	-.27	-.96	**	n.s.	**
The students	-.87	-.64	-.38	n.s.	**	*
The town	-.51	-.50	-.54	n.s.	n.s.	n.s.
The requirements	-.07	-.18	-.17	n.s.	n.s.	n.s.
Your adviser	-.92	-.37	-.40	**	**	n.s.
The social life	-.62	-.68	-.65	n.s.	n.s.	n.s.
The physical facilities	-.61	-.48	-.78	n.s.	n.s.	**
Your courses	-.86	-.45	-.49	**	**	n.s.

n.s. : not significant
* : p<.05
** : p<.01

freshmen who made ratings in both the fall and the spring. This table, although difficult to understand, is the critical one for comparing satisfaction ratings because it takes into account differences in the fall expected satisfaction ratings. The minuses in the first three columns indicate that there was a drop from the expected satisfaction ratings in September to the actual satisfaction ratings in May on all the aspects of the college and in all three years.

However, Table 6 also shows that, in general, there was significantly less disillusion during the first two years of the new curriculum than there had been during the last year of the old one. This is clearly the case with ratings of satisfaction with the faculty, your adviser, and your courses. Note that, although there was relatively little disillusion with the administration during 1969-1970, during 1970-1971 this was the source of the biggest disappointment with Hiram. This drop was due in large part to specific campus circumstances, but, in addition, the social regulations, which had seemed new and progressive when instituted in 1969, may have seemed old and restrictive by spring of 1971.

Comparisons of the satisfaction ratings of the last group of sophomores (May 1969) to spend two years under the old curriculum and the first sophomores (May 1971) to spend two years under the new program yield some interesting supplemental results (see Appendix 2 for the means, standard deviations, and analysis of variance table). The new curriculum sophomores tended to rate all aspects of the college higher than the old curriculum sophomores. This is significantly the case in terms of satisfaction with courses, faculty, graduation requirements, other students, and advisers. In general, sophomores have been less satisfied with corresponding aspects of the college than freshmen; however, the 1971 new curriculum sophomores were actually more satisfied with their advisers and courses than they had been as freshmen the year before.

Since the new curriculum had been in operation only two years at the end of this study, there were no seniors who had spent a full four years under the new program. However, satisfaction ratings of the 1971 seniors, who were a transitional group, were generally higher than corresponding ratings from the 1969 seniors, the last to spend four years under the old program.

Unfortunately, we do not have faculty and staff ratings of their satisfaction during the old curriculum, but we do have such ratings made at the very beginning of the new program (September, 1969) and also in May, 1970 and in May, 1971. These faculty and staff ratings were moderately high, i.e., similar to student end of year ratings. The faculty ratings were quite consistent over the three times. The only significant exceptions were higher ratings of the rest of the faculty and of the Interdisciplinary courses in the most recent ratings, and much lower ratings of the Twentieth Century Course in both May, 1970 and May, 1971. While faculty and staff expectations for the new curriculum were not as high as those of freshmen, the former have suffered little, if any, disillusion, except with the Twentieth Century Course.

A somewhat different method of measuring satisfaction with the College is provided by the ten-item satisfaction scale scores from the College Student Questionnaire, Part 2. The results of the end of year freshman responses to CSQ 2 are presented in Table 7. The table indicates that under the old curriculum Hiram freshmen were about average, compared to the national sample of students, in their satisfaction with the faculty; they were above average in their satisfaction with the Hiram administration; but their satisfaction with other Hiram students was very much below the national average. At the end of the first year under the new

Table 7. Comparison of CSQ 2 Satisfaction Scale Scores for Hiram Freshmen
(In standard score units, Institutional National Norms)

	Curriculum			Comparisons		
	Old	New				
Satisfaction With	May 1969	May 1970	May 1971	1969 vs. 1970	1969 vs. 1971	1970 vs. 1971
Faculty	48	66	65	**	**	n.s.
Administration	57	69	56	**	n.s.	**
Students	39	53	53	**	**	n.s.

n.s. : not significant
** : $p < .01$

curriculum, there was significantly increased satisfaction in all three areas. These 1969-1970 freshmen rated the faculty, administration, and even other students higher than did students at other colleges. In fact, Hiram freshmen rated their satisfaction with the Hiram faculty and administration higher than did students at 95 percent of the colleges in the national norm group. In May, 1971 Hiram freshmen again rated the faculty very highly. The mean rating of satisfaction with the administration, while still relatively high, had slipped back to the level it had been at under the old curriculum. Ratings of other students, by the 1971 freshmen, remained much higher than during the last year of the old curriculum. These CSQ results are in agreement with those of the single item satisfaction with Hiram Scale presented in Table 4. Further interpretation and discussion of the meaning of the satisfaction ratings, as well as of the attitude and achievement results is reserved for the conclusions section, which follows the presentation of all the results.

Attitudes and Values

Table 2, which was examined earlier in a different context, indicates that on the College Student Questionnaire scales Hiram students viewed themselves as considerably more independent from their families and their peers than freshmen entering the average American college. They also answered questions in a way which indicates that they viewed themselves as more socially concerned, very much more liberal, and somewhat more interested in serious literary and cultural matters than typical entering freshmen.

Table 8 shows that at the end of their freshman year, Hiram students continued to score relatively highly, compared to students attending other colleges, on the first four scales. Ratings on cultural sophistication and study habits were about average, but the amount of participation in traditional extracurricular activities was relatively low at Hiram.

By comparing the corresponding points of Tables 2 and 8, one can obtain a rough indication of the relative amount of change at Hiram compared to changes in students at other colleges. For example, notice that in 1968-1969, on the family independence scale, entering Hiram students scored relatively higher (standard score 60) than the end of year freshmen (standard score 57). This does not mean that

Hiram students were less independent in the spring, but rather that they changed less than the average college student. In fact, Hiram freshmen scored higher on each of the five common scales at the end of each year, except for a slight decrease in peer independence during 1969-1970.

Table 8. Comparisons of the 1969, 1970, and 1971 Freshmen on the CSQ 2 Standardized Scale Scores (Institutional National Norms)

	Curriculum			Comparisons		
	Old	New		1969	1969	1970
	May	May	May	vs.	vs.	vs.
Scale	1969	1970	1971	1970	1971	1971
N=	198	150	138			
Family independence	57	62	68	n.s.	**	*
Peer Independence	56	55	63	n.s.	n.s.	n.s.
Liberalism	60	78	78	**	**	n.s.
Social Conscience	61	67	63	n.s.	n.s.	n.s.
Cultural Sophistication	50	51	54	n.s.	n.s.	n.s.
Extracurricular Involvement	47	43	40	n.s.	n.s.	n.s.
Study Habits	41	48	50	n.s.	n.s.	n.s.

n.s. : not significant
* : $p < .05$
** : $p < .01$

It appears that under the old curriculum Hiram students changed less than the national average on family and peer independence and on cultural sophistication, but more than the average on the social conscience scale. Under the new curriculum, Hiram students changed about the average amount on the independence and cultural sophistication scales, but changed much more than average on liberalism and social conscience, especially in 1969-1970. We will look at this latter finding from a different perspective below.[4]

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[4] The statements in the above paragraph are tentative, but probably conservative, because it would be difficult to make adequate statistical

Table 8 also indicates that there were a few significant differences at the end of the freshman year between the attitudes of the new curriculum freshmen and the old curriculum group. In both new curriculum years students were more liberal in May. At the end of the second new curriculum year (1971), freshmen said they were more independent from their families than had either of the two preceding groups.

However, this latter difference and the higher second year liberalism score were probably due to the higher entering scores on these dimensions, which were noted in the discussion of Table 2. Appendix 2 contains the analysis of variance table which provides comparisons of the change scores for those freshmen who took both CSQ 1 at entrance and CSQ 2 in May. This analysis indicates that freshmen became significantly more liberal and socially concerned during the first new curriculum year (1969-1970) than during either the year before or the one after. Since the effects were not replicated in 1970-1971, it seems likely that they were at least partially due to situational factors like the tragedy at nearby Kent State, which had occurred only a couple of weeks before the spring 1970 testing session.

To check on this possibility we obtained data from five other colleges which administered CSQ 1 and 2 during 1969-1970. These five institutions included an elite eastern university, a state college, a Catholic men's college, a women's college, and a technical junior college. All five were relatively small institutions. The very large changes at Hiram in liberalism and social conscience were not evident at these

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comparisons. A number of factors tend to make the Hiram changes appear relatively smaller than they may in fact have been. Because entering Hiram students had relatively high scores, there no doubt is more regression toward the mean in the spring scores than for the average college. This was not taken into account. In addition the spring national norms are for a group composed not only of freshmen, but of upperclassmen as well. This put Hiram freshmen at a further disadvantage in making comparisons because it is known that seniors score higher than freshmen on most of these scales. Appendix 2 contains a table showing the mean changes from fall to spring for Hiram students and the national sample.

other colleges. However, Hiram's proximity to Kent and particular testing dates no doubt played a part in the larger changes at Hiram.

In order to compare intellectual values and social-emotional attitudes at the end of two years under the new curriculum with attitudes and values after two years under the old program, the Omnibus Personality Inventory was administered to sophomores in May 1969 and in May 1971. Table 9 provides the Omnibus Personality Inventory Scores in standard score units. The new curriculum sophomores were significantly higher than the old curriculum group on four (thinking introversion, theoretical orientation, complexity, and autonomy) out of the six OPI intellectual disposition categories. There were no differences between the groups on the other two "intellectual" categories--estheticism and religious liberalism. New curriculum students were lower on practical outlook, which is usually inversely related to the intellectual disposition categories. In addition, the new curriculum sophomores felt they were

Table 9. Comparisons of Old and New Curriculum Sophomores on the Omnibus Personality Inventory (Standardized Scale Scores)

	Old Curriculum May 1969	New Curriculum May 1971	Comparison 1969 vs. 1971
N	198	96	
Thinking Introversion	48.3	51.1	*
Theoretical Orientation	46.7	50.0	**
Estheticism	51.5	52.1	n.s.
Complexity	52.6	56.0	*
Autonomy	56.1	58.5	*
Religious Liberalism	56.0	55.7	n.s.
Social Extroversion	45.6	45.7	n.s.
Impulse Expression	55.6	55.6	n.s.
Personal Integration	48.9	51.4	*
Lack of Anxiety	47.5	50.0	*
Altruism	49.3	50.8	n.s.
Practical Outlook	47.1	42.8	**
Femininity-Masculinity	47.0	45.9	n.s.
Response Bias	45.1	48.6	**

n.s. : not significant
* : $p < .05$
** : $p < .01$

better adjusted and less anxious than the old curriculum sophomores. The higher response bias score of the new curriculum students is a result of their better adjustment and higher intellectuality. Since the mean score is still less than the national average, it seems that new curriculum students are not just trying to make themselves look good.

All of these differences seem to imply that the new curriculum has had a desirable effect on students. However, this conclusion has to be tentative because we do not have freshmen OPI scores for the old curriculum group, and it is thus possible that some of the difference might have been present at entrance.

Achievement

Since one of the main goals of the new curriculum was to promote good communication and since students in it did not take the traditional freshman English courses, it seemed important to measure the ability to write clear effective English at the end of the freshman year. The CEEB English Composition Test is designed to do just that. Since this test is an alternate form of the CEEB English Achievement Test, which many of our students have taken in high school, we could readily study student change on this dimension. Table 10 shows that the new curriculum freshmen scored higher, relative to their high school scores, than did the old curriculum group which had the presumed advantage of two terms of Freshman

Table 10. Comparisons of Mean High School and College English Achievement Scores for Freshmen Who Took Both Tests

	Curriculum			Comparisons		
	Old	New		68-69 vs.	68-69 vs.	69-70 vs.
Mean Score	68-69	69-70	70-71	69-70	70-71	70-71
N	109	72	71			
High School English	543	515	542			
College English	534	527	555			
Change	-9	+12	+13	*	*	n.s.

n.s. : not significant
* : $p < .05$

English courses. When the two new curriculum groups were pooled and compared to the old curriculum, the differences between the change scores were significant at the one percent level, thus, strengthening the conclusion that the new curriculum students achieved relatively better.

The analysis of covariance on the comparisons of the freshman English achievement scores for all students who took the test at Hiram (not just those with both high school and college scores) is contained in Appendix 2. Using high school percentile and SAT verbal scores as covariates, we found that the 1971 new curriculum freshmen scored significantly higher than the old curriculum freshmen, but none of the other contrasts were significant.

Although the results favor the new curriculum, they were somewhat disappointing because few students showed marked improvement in English achievement, with the majority of old curriculum students actually declining a little. This relatively poor showing was probably due partially to lower test taking motivation in college and partially to the failure of traditional college English programs to deal significantly with grammar, word usage, etc.

Even though, by the elimination of the distributive general graduation requirements, we placed less emphasis on traditional achievement, we wanted to be sure that such achievement would not badly deteriorate. The Survey of College Achievement (SCA) measures general achievement in five broad areas (English Composition, Humanities, Social Sciences, Natural Sciences, and Mathematics) usually encompassed by general college graduation requirements.

It had been predicted that achievement in the first two years of the much less prescriptive new program would be as high as under the old curriculum. Table 11 shows that, in fact, there were no statistically significant differences between the two groups on the five SCA scales.

However, on the English Composition, Humanities, and Natural Science scales the old curriculum group scored higher and the unadjusted differences approached significant at the five percent level. It can also be seen from the table that the old curriculum students had been somewhat higher in their high school classes and had had higher SAT verbal and math scores. When these variables were used as covariates the three differences favoring the old curriculum (in English, Humanities, and Natural Science) all but disappeared and the two differences favoring the new program were enhanced. In fact, when the mathematics scale means were adjusted in this way the new curriculum sophomore scores were significantly higher than those for the old curriculum. This difference, if real, is probably not directly related to the curriculum change since there were no all-college math requirements in either

Table 11. Comparisons of the Unadjusted Mean Standard Scores for the Survey of College Achievement and the Presentation of Mean Values of Three Covariates

SCA Scales	Old Curriculum Sophs. May 69	New Curriculum Sophs. May 71	Comparisons
N	233	100	
English Composition	51.5	49.8	n.s.
Humanities	54.5	52.5	n.s.
Social Science	52.0	52.1	n.s.
Natural Science	52.1	50.2	n.s.
Mathematics	50.7	51.6	n.s.
Covariates			
N	211	90	
High School %ile	76	72	
SAT Verbal	527	512	
Sat Math	549	544	

the old or new programs. The difference is probably due to two factors. The math department was stronger in the 1969-71 period than it had been from 1967-69, and biology and behavioral science students were more likely to take math in their first two years of college under the new program. The analysis of covariance table is presented in Appendix 2 along with the other statistical tables.

To recap, the four broad research hypotheses were supported, in general, by the results. First, satisfaction was higher and disillusion with college was lower than under the old program. However, the effect of changes in social regulations appeared to make only a temporary, one year, enhancement of satisfaction with the administration. Second, social and intellectual attitudes did generally differ in the predicted direction, but the net (impact) effects were often not significant. Third, as predicted, achievement test scores did not significantly differ, except in English at the end of the freshman year. Finally, the faculty did indeed enter into the program with reserved optimism, but they maintained this relatively high level of satisfaction with all components of the curriculum except the large, year-long Twentieth Century and Its Roots Course.

CONCLUSIONS

This section will provide an overall interpretation of the results and an extension of the discussion, begun in preceding sections, of the difficulties inherent in the attempt to evaluate the effects of a curricular innovation. These difficulties make all conclusions tentative and lead us to be cautious about inferring that the curriculum was the cause of even those changes which were clearly statistically significant.

Let us begin with some comments about the satisfaction ratings. Although it has been shown that there was considerably higher satisfaction and less disillusion among students in May of 1970 and 1971 than there had been in May 1969, factors other than the new curriculum might have had an important influence on the results.

For example, during this period Hiram, like many colleges, had episodes of student unrest which no doubt affected student attitudes, at least temporarily. While the response of Hiram faculty and administration to Black student demands and a class disruption in the spring of 1969 seemed divisive, the handling of the events following the Kent State tragedy in 1970 seemed to unite the community and focus frustrations on outside agents.

There were also a few procedural differences between the testing sessions of the different years. For example, the 1969 freshmen made their satisfaction ratings after completing the English test and with CSQ yet to go while the 1970 and 1971 students made their ratings at the beginning of a session in which they were assigned to do either English or CSQ.

Nevertheless, we feel that a strong case can be made that the new curriculum produced the greater student satisfaction with the academic program at Hiram. This higher satisfaction was due only in part to the slightly higher expectancies of the new curriculum freshmen. The main reason seems to have been that the new curriculum more nearly lived up to the high expectations of entering freshmen than was the case with the old curriculum. Since freshmen satisfaction on the CSQ changed from about the national average to markedly above average after the onset of the new curriculum, we infer that the former large disillusion is the typical pattern at most colleges and that the new curriculum finding of moderate disillusion is unusual and laudatory.

The fact that there were few significant differences in entering freshman expectations of satisfaction weakens the contention that the higher new curriculum ratings are merely an example of the Hawthorne effect. Further support is obtained from the finding that the 1969-70 freshmen continued their relatively higher satisfaction at least through their sophomore year. In addition, the importance of the curriculum in determining these ratings is supported by the finding that the higher satisfaction (and lower disillusion) scores were concentrated on the academic aspects of the programs, which should have been most affected if the curriculum was the cause.

It could be argued that students were more satisfied, not because the program was more stimulating, more personally rewarding, or more intellectually challenging, but rather because it was easier. Of course, in certain ways it was easier. New curriculum freshmen had fewer general education requirements; they did not have to take courses far from their interests and talents; and they could take their toughest courses pass-fail if they chose.

Thus, it is probably true that the higher satisfaction was caused in part by the decrease in traditional academic pressures. Some might argue that learning to do what one does not like is a major step in achieving intellectual discipline and development. However, we feel that, at least at the college level, little is to be gained, and perhaps much to be lost, by rigidly insisting on traditional forms of learning.

It is most encouraging to remember that new curriculum students consistently scored higher than old curriculum students on the intellectual attitude scales. That is, the new curriculum students placed a higher value on books, reading, complex problems, logical thinking, etc. As mentioned earlier, the conclusion that these higher scores were caused by the introduction of the new curriculum has to be tempered by the lack of a significant difference in improvement or change scores on the one scale (CSQ cultural sophistication) where we have scores from old and new curriculum entering freshmen. Thus, it is possible, although we have little reason to think so, that the higher new curriculum OPI intellectual attitude scale scores were due to higher entering scores or some other factor.

Since there was considerable discussion of the CSQ scores in the results section, little needs to be added here. It seems clear that new curriculum students were more liberal and more independent from their families. However, since entering new curriculum freshmen also tended to be higher on these scales, changes were not significantly greater under the new curriculum. The exception was during 1969-70 when both liberalism and social conscience changed more than under the old curriculum. We noted before that this may have been due more to the Kent State tragedy than to the new program. On the other hand, a couple of factors may have worked against finding significantly different change scores. The Hiram students entered with high scores on most of the CSQ scales, which imposed some ceiling effect, and on the liberalism and social conscience scales the changes under the old curriculum were more than the national average, which made it hard for the curriculum to produce an even larger change. Thus, although tentative, there is some reason to believe that the new program may have some added effect in the CSQ scale areas, especially in liberalism and social conscience.

The finding that new curriculum students felt better adjusted was encouraging, but not predicted and somewhat hard to explain. Perhaps when people feel more satisfied with their work they also begin to view themselves more positively. Unfortunately, we do not have other supporting data which would add strength to (or detract from) this conclusion.

It is very hard to know what kind of criteria ought to be used to see what and how much students have learned under this new program. It seems intrinsically unfair to measure student achievement in this non-traditional curriculum with traditional instruments. Special tests ought to have been developed to get at the kind of integrated, interdisciplinary, problem-oriented learning which the new Hiram program was designed to produce. However, we knew of no such tests and of no norms to tell us whether we were doing well or poorly.

For expediency we decided to use the traditionally academic achievement tests described earlier. They probably were not optimal instruments even for the old curriculum, but certainly they were more appropriate for it. Even though the main thrust of the new program was elsewhere, we hoped that traditional achievement, especially in English composition, would remain high. As was demonstrated earlier this was the case. In fact the only significant results, in freshman English composition and in sophomore mathematics, favored the new curriculum. It is interesting to speculate that the new curriculum students, with their greatly increased exposure to contemporary problems, value oriented issues and interdisciplinary studies, surely learned more in these aforementioned areas and, thus, should be acknowledged to have learned more overall. However, this is pure speculation. All we can safely say is that on traditional tests they performed at least as well as old curriculum students.

Although each conclusion by itself has to be considered tentative, the combined results of higher satisfaction with the academic program, stronger intellectual values, and no loss in traditional achievement, make us feel that the Hiram curriculum has contributed to increased student development and more "love for learning."

RECOMMENDATIONS

This is a time when many colleges and universities are engaging in curriculum revision. The student-centered Hiram curriculum should be of special interest because we feel that it is a significant move toward a regeneration of undergraduate education in the United States. While the curriculum will continue to evolve, we feel that Hiram has moved in a direction which will be significant for the future of colleges in this country. This feeling has been supported by the feedback we have received from Hiram students and faculty and from representatives of other colleges.

Hiram has a number of advantages which make this new program an ideal prototype for educational reform. Like many American colleges, Hiram is small, good but not elite, and financially stable though not wealthy. The Hiram faculty and students felt the need for change a number of years ago, before the current climate of "unconditional demands." This helped Hiram carefully plan and evaluate a change while other colleges are now acting more precipitously.

We feel that we have demonstrated that Hiram's new program is effective; therefore, we feel that it could serve as a general model for other institutions. This recommendation does not, of course, mean that we would encourage others to copy the particulars of our curriculum. Each school must design a program to fit its individual faculty, student body, and milieu. In addition, as stated earlier, not all aspects of the Hiram program have been equally successful. However, we think our experience points to several basic changes which others might want to consider.

First, we would recommend a substantial reduction in the number of general education courses required for graduation. Although there may be some small loss in traditional academic achievement in areas in which students choose to take few courses, this loss is likely to be much less than previously feared. Furthermore, the positive effects of generally higher satisfaction and greater intellectual interest in the chosen subject matter areas probably more than offset the potential loss of breadth in traditional achievement. Fewer required courses encourages students to take more responsibility for their own education and, therefore, should lead them to be more personally involved in it.

Second, we would recommend that interdisciplinary and nondepartmental approaches be used as much as possible for meeting the common goals of the college curriculum. Knowledge will always be viewed as compartmentalized and irrelevant, to all except perhaps the professional life of the person, as long as students feel, for example, that good writing is done only in English class and that the discussion of moral issues takes place only in religion class.

Third, we would recommend that opportunities for students and faculty to get together in settings which facilitate modeling and joint intellectual endeavor be maximized. The small class has always been an ideal of the American college, but what is recommended here is more than small group lectures. Settings like those of our Institute and Colloquia seem to get students actively involved in the learning process. It cannot be demonstrated from the preceding data, but we feel that the success of the Freshman Institute and the Freshman Colloquia and the improved underclass advising, are primarily due to the fact that these functions take place in an atmosphere which is not only informal and personalized, but is also directed toward meaningful intellectual activity.

Finally, we would recommend that a college be content to fully educate the student constituency it now enrolls rather than setting as its goal the recruitment of "better" students. We think that one of the major results of this study is that it indicates that how things are done at a college does make a difference. We have shown that a change in the curriculum can substantially change the type and amount of impact that a college has on students, even with essentially the same faculty and entering students. This result undercuts the commonly held contention that it doesn't matter what you do because everything depends on having good students and good faculty. This contention was also disputed by Astin (1968) who found that the amount of learning or added value which takes place at a college is not related to the prestige of the school.

The results of this study should provide encouragement to educators who hope to make significant academic changes at their colleges. The Hiram program provides evidence that substantial innovation, more than just minor tinkering or gimmicks, can take place at typical (that is, moderately selective, non-experimental) colleges which have fairly traditional faculties and student bodies. Furthermore, experience indicates that such changes can win widespread student and faculty support; can have a generally positive impact on student satisfaction, achievement, and attitudes; and can be operated with little additional staff or cost. In fact, in the face of the enrollment and financial problems at most small private colleges, in 1969 and 1970, Hiram had the largest freshman classes in its history and balanced budgets.

REFERENCES

American Educational Research Association. Curriculum. Review of Educational Research 1969, 39, 283-375.

Astin, A. W. Undergraduate achievement and institutional "excellence." Science 1968, 161, 661-668.

Educational Testing Service. Survey of College Achievement: preliminary technical manual, Princeton: Author, 1969.

Feldman, K. and Newcomb, T. The Impact of College on Students. San Francisco: Jossey-Bass, 1969.

Freedman, M. B. The College Experience. San Francisco: Jossey-Bass, 1967.

Heist, P. and Yonge, G. Omnibus Personality Inventory, Form F: manual. New York: The Psychological Corporation, 1968.

Jacob, P. E. Changing Values in College: an exploratory study of the impact of college teaching. New York: Harper, 1957.

Katz, J. and Sanford, N. The curriculum in the perspective of the theory of personality development. In N. Sanford (Ed.) The American College: a psychological and social interpretation of the higher learning. New York: Wiley, 1962. pp. 731-773.

Katz, J. et al. No Time for Youth: growth and constraint in college students. San Francisco: Jossey-Bass, 1968.

McKeachie, W. J. Procedures and techniques of teaching: a survey of experimental studies. In N. Sanford (Ed.), The American College: a psychological and social interpretation of the higher learning. New York: Wiley, 1962. pp. 731-773.

Peterson, E. College Student Questionnaires: technical manual. Princeton: Educational Testing Service, 1968.

Sanford, N. Where Colleges Fail: a study of the student as a person. San Francisco: Jossey-Bass, 1967.

APPENDIX 1. METHOD SUPPLEMENT

I. Report to the Chicago Regional Office of Education: Review of data-gathering instruments

II. Details on numbers of subjects

III. Additional information on each of the Instruments

  A. College Student Questionnaire
  B. Satisfaction with Hiram Scale
  C. Omnibus Personality Inventory
  D. CEEB English Composition Exam
  E. Survey of College Achievement
    Adapted from Survey of College Achievement; Preliminary Technical Manual

REPORT TO THE CHICAGO REGIONAL OFFICE OF EDUCATION
REVIEW OF DATA-GATHERING INSTRUMENTS
August, 1970

1. Hiram College, Hiram, Ohio 44234
   a. Office of the Dean of the College
   b. Dr. George A. Morgan, Director of Institutional Research
      216--569-3211

2. Title of Study: "Evaluation of the Impact of a Student-Centered Freshman Year Program at a 'Typical' Liberal Arts College." This study is part of a larger self-study and curriculum evaluation project at Hiram College. The comparison data have already been gathered with support from the College and the National Endowment for the Humanities.

3. The project is an evaluation of the impact of a new curriculum which places the responsibility for learning and social behavior directly with the student. The Hiram program is more individualized and provides much more freedom than is found in the typical liberal arts college program, including Hiram's previous program. While the student is expected to be actively responsible for his own learning and behavior, he is supported by a strong advising (tutorial) system which is built into the course structure of the curriculum.

   Thus, it is hypothesized that the new curriculum, which began in the fall of 1969, provides a markedly different college experience whose effects should be measured. Office of Education funds are being used for the evaluation of the overall impact of the second year of the new curriculum.

   Since the College has data about student attitudes, achievements, and satisfaction under the old curriculum, we have an unusual opportunity to study the extent to which a college can alter the kind and amount of impact it has on students. The basic design of this part of the study involves comparisons of changes during the freshman year for the last class to enter under the old curriculum and the current entering class. Also included is a comparison of changes during the first two years of college for students under the old curriculum and the first group to spend two years under the new curriculum. It is anticipated that there will be significantly greater changes in certain attitudes (e.g., independence, liberalism, and social conscience) and higher satisfaction than in the past. Achievement scores are predicted to be as high as under the old more prescriptive curriculum.

Because the design is quite complex, a schematic representation of those aspects which relate to this study is given below. The Office of Education support will be used during the 1970-71 academic year to test sophomores (cohorts I & II, May 1971) and freshmen (cohorts III and IV, September 1970 and May 1971). The abbreviations and design details should be clarified by the narrative of questions 5 and 6.

	FRESHMAN YEAR		SOPHOMORE YEAR
	September	May	May
OLD CURRICULUM	1968	1969	1969
Students entering in 1968 and before	CSQ I ESHS	CSQ II SHS ENG	SCA SHS OPI
NEW CURRICULUM	1969	1970	1971
Students entering 1969	I {SCA CSQ I ESHS	I {CSQ II SHS	I {SCA SHS
	II {OPI ESHS	II {ENG SHS	II {OPI SHS
	1970	1971	1972
Students entering 1970	III {CSQ I ESHS	III {CSQ II SHS	not yet determined
	IV {OPI ESHS	IV {ENG SHS	

4. Title of and need for each instrument:

A1) College Student Questionnaires, Part I--for entering students (CSQ I). This research questionnaire was developed by the Educational Testing Service (Princeton, N.J.) for its Institutional Research Program for Higher Education. It is valuable because it provides a wide range of questions about entering students' educational and vocational plans, their backgrounds and certain attitudes. Thus, it is possible to see if the new curriculum is attracting a different type of student to Hiram, i.e., we can compare students entering in 1968 and 1969 with those entering in 1970. CSQ I also provides a baseline for measuring changes in attitudes during the freshman year. Many of the questions are well suited to the types of changes (e.g., increased independence and social conscience) with which the freshman year of the new curriculum is designed to deal.

A2) College Student Questionnaire, Part II--for enrolled students (CSQ II). This questionnaire complements CSQ I, using many of the same items to facilitate the study of student change. In CSQ II the background items of CSQ I are replaced by items about student perceptions of and satisfaction with college. These are, of course, important to the study.

B1) Expected Satisfaction with Hiram Scale (ESHS). This short, locally developed questionnaire measures students' expected satisfaction with a number of specific aspects of the College and with expected changes during college. It provides a baseline for measuring changes in satisfaction during college.

B2) Satisfaction with Hiram Scale (SHS). This scale is the same as ESHS except that it measures actual satisfaction and perceived personal changes after a period of time at Hiram. It is needed for that purpose.

C) Omnibus Personality Inventory-Form F (OPI). This is a standardized questionnaire designed to assess selected characteristics of human behavior, chiefly in the areas of normal ego-functioning and intellectual activity. The dimensions included were chosen because of their relevance to academic activity or the help they would provide in understanding changes in students' attitudes, values, and interests. Since the Hiram curriculum is designed to enhance growth in several of the areas measured by the OPI, its use is important. The OPI supplements the CSQ in that it provides a more in-depth measure of dimensions which are expected to change more gradually, over two or even four years, as a result of the general change in environment due to the new curriculum. Therefore, the OPI is given to entering students and again after two (and also four) years under the curriculum.

D) English Composition (ENG). This standardized achievement test is one of the College Placement Tests developed by the College Entrance Examination Board. Since students in the new Hiram curriculum do not take the traditional freshman English courses, it is important to measure their ability to write clear effective English at the end of the freshman year. The English Composition Test is designed to do this. Furthermore, the scores can be compared with scores on the CEEB English Achievement Test which many of our students have taken in high school. It is anticipated that the new freshman program will lead to scores at least as high as under the old required English program.

E) Survey of College Achievement (SCA). This is a short standardized college achievement test developed by Educational Testing Service. It measures general achievement in five broad areas usually encompassed in the general (2 year) college graduation requirements. Since Hiram's curriculum has eliminated the traditional requirements, it is important to measure achievement in these areas. It is anticipated that achievement in the first two years of the much less prescriptive new program will be at least as high as under the old curriculum.

5. Respondents for each instrument:

A1) CSQ I. (a) About 200 respondents. (b) Freshman entering Hiram College in September 1970. (c) Cohort III, which is one half of all entering freshmen. The sample, approximately a random half, will be selected by dividing the class alphabetically in subgroups of about 100 so that they can be accommodated in the four large classrooms at Hiram. The first and third subgroups (e.g., A-F and K-O) will be cohort III and take CSQ I. In order to keep the response burden reasonable, each freshman is being asked to do only one of the two main instruments. The alphabetical division was decided upon for ease of student notification even though it may not produce a truly random sample.

A2) CSQ II. (a) About 200 respondents. (b) End of year freshmen in May 1971. (c) Cohort III, which includes all enrolled students who took CSQ I in September 1970. Thus, this is in essence a follow-up or retest of the approximately random one-half sample described above.

B1) ESHS. (a) About 400 respondents. (b & c) All freshmen entering in September 1970, i.e., both cohorts III and IV.

B2) SHS. (a) About 700 respondents. (b) End of year freshmen and sophomores in May 1971. (c) Cohorts I, II, III and IV, i.e., all freshmen and all sophomores.

C1) OPI. (a) About 200 respondents. (b) Entering freshman in September 1970. (c) Cohort IV which will be formed like cohort III (see 5A1c above). Thus, it will be an approximately random one-half sample.

C2) OPI. (a) About 150 respondents. (b) End of year sophomores in May 1971. (c) Cohort II, which is a sample composed of one half of all students who entered Hiram in September 1969, as the first class under the new curriculum. The sample was drawn in the same general manner as the one in 5A1c above and, thus, will be approximately a random half. These students took the OPI as entering Freshmen in September 1969 so this is, in essence, a two year follow-up.

D) ENG. (a) About 200 respondents. (b) End of year freshmen in May 1971. (c) Cohort IV, which is approximately a random half of the freshman class.

E) SCA. (a) About 150 respondents. (b) End of year sophomores in May 1971. (c) Cohort I, which is the other half of the students who entered Hiram in September 1969. Thus, the sample will be approximately a random half and will be made up of students who took the SCA as entering freshmen.

6. Average amount of time required to complete each instrument:

A1)	CSQ I	75 minutes	Cohort III, September 1970
A2)	CSQ II	75 minutes	Cohort III, May 1971
B1)	ESHS	15 minutes	Cohorts III & IV, September 1970
B2)	SHS	15 minutes	Cohorts I, II, III & IV, May 1971
C)	OPI	60 minutes	Cohort IV, September 1970 and Cohort II, May 1971
D)	ENG	60 minutes	Cohort IV, May 1971
E)	SCA	75 minutes	Cohort I, May 1971

7. The subjects will complete the instruments in one of the four large classrooms at Hiram College. They will work in proctored groups of about 100.

8. The complexity of the design and the types of instruments used provide a large number of item and scale scores, i.e., many dependent variables. There are also many types of comparisons which can be made, e.g., old curriculum vs. new, beginning of freshman year vs. end of year, Hiram sample vs. national norm group, etc. This will lead initially to a number of tables and graphs. In order to handle the making of inferences relatively parsimoniously and to reduce the problem of multiple comparisons, generalized t tests and multivariate analysis of variance will be used in testing the significance of most comparisons. The project director is seeking consultative help in order to deal with the methodological difficulties of making inferences about student change.

9. Not relevant.

10. It is obvious that the study is in part longitudinal and that students are tested more than once. In the broader study some students will be tested four times, the beginning and end of their freshman year, the end of the sophomore year, and the end of the senior year. In the present study sophomores (cohorts I and II) are tested once and freshman (cohorts III and IV) are tested twice, eight months apart. Listed below for the OE funded part of the study is the cohort, sample size, date and time needed for testing.

Cohort #	N	September 1970 Testing Time	May 1971 Testing Time
I	c.150	No	Yes, 90 minutes
II	c.150	No	Yes, 75 minutes
III	c.200	Yes, 90 minutes	Yes, 90 minutes
IV	c.200	Yes, 75 minutes	Yes, 75 minutes

11. Students' answer sheets are identified by code number, but are confidential except for research purposes and personal counseling at the student's request. The identification number is necessary for the longitudinal aspects of the study. No analysis or publication of the date of individual subjects is anticipated. So far the data have been used only for this general study, but will be kept available for other authorized research projects. Such authorization must be obtained from the project director who will be careful that the data is used only by professional persons for a legitimate research project which will cause no embarrassment or discomfort to the subjects. The data is not a part of the permanent record of the subjects and will be destroyed at the completion of the overall project.

Details on Numbers of Subjects

The following table provides information about the students and faculty who completed each of the instruments used in this study. The material is listed in chronological order, with freshman data presented before sophomore and senior data from the dame date. The faculty and staff information is given last.

The first two columns provide the identification of the group, e.g., freshmen in September 1968. In 1970 and 1971 rather than trying to give two long instruments and the brief satisfaction scale to all members of a class, only half the group took each major instrument. The classes were divided alphabetically for ease of communication with the students. For example, in May 1970 freshmen with last names which begin with the letters A through F and K through O took the English test while G-J and P-Z took the College Student Questionnaire, Part II. Such a systematic sample gives the same results as a simple random sample, unless there is some peculiar association between the alphabet and performance on the instruments. There is no reason to believe that that was the case.

The third column marked "Inst." uses the same abbreviations for the research instruments as the preceding section of this appendix, e.g., ESHS is the Expected Satisfaction with Hiram Scale. The column marked "No. Pop." indicates the size of the population, i.e., the number of students in the class who were potential subjects. This number includes all on-campus students in the class, except a small number who were excluded because they were blind, foreign, etc.

The next column, "No. Test," provides the number of students who came to one of the testing rooms or later to a make up session. The following column, "% Test," is the percentage of the population which showed up, i.e., the preceding column divided by the one before that. The median percentage of participation was 89, with a range from 64 to 99 percent. In general, the percentages were larger for entering freshmen and smaller for upperclassmen.

The column headed "No. Valid" gives the number of subjects whose answer sheets provided some useable scores. In almost all cases students who took the brief satisfaction scale seemed to provide valid responses. This was also true of the relatively non-threatening CSQ. With the OPI the main problem was the omission of responses. About five percent left so many of the 385 questions blank (or made obvious response patterns) that their inventories were judged invalid and not scored. It was decided to declare achievement tests invalid if they fell more than 100 points (about one standard deviation) below their corresponding high school SAT score. On this basis there was a subject loss of about one percent for the SCA and about eleven percent for the English test. Since the losses were about equal for the three years, the results were not markedly influenced by the omission of these scores. There were a few more invalid scores under the old curriculum so the results were slightly biased against the new curriculum.

The final two columns, "No. Comp." and "% Comp.," provide the number and percentage of students who had complete data, i.e., who had valid scores for every scale or item of the instrument. Since the English test has only one score, all subjects who had valid tests also had complete tests. With the other instruments, students sometimes omitted items which lead to some complete items or scales and others which were blank or incomplete. This is important because the MANOVA program omits the whole subject if any part of his data is missing. Consequently, the analyses given in this report were made only on subjects with "complete data." Inspection of the item or scales means for all subjects who had scores on that particular item or scale, revealed no major differences with those reported here. The percentage of the total population of subjects who had complete data ranged from 63 to 99, with a median of 84.

The table of subject data follows:

Class	Test Date	Inst.	No. Pop.	No. Test.	% Test	No. Valid	No. Comp.	% Comp.
OLD CURRICULUM								
Freshmen	9/68	ESHS	305	303	99%	303	298	98%
Freshmen	9/68	CSQ 1	305	302	99%	302	274	90%
Freshmen	5/69	SHS	284	248	87%	248	246	87%
Freshmen	5/69	CSQ 2	284	240	85%	230	198	70%
Freshmen	5/69	ENG	284	232	82%	201	201	71%
Sophomores	5/69	SHS	276	239	87%	239	217	79%
Sophomores	5/69	SCA	276	235	85%	234	233	85%
Sophomores	5/69	OPI	276	217	79%	198	189	69%
Seniors	5/69	SHS	237	236	99%	236	213	90%
Seniors	5/69	OPI	237	220	93%	196	196	83%
Seniors	5/69	SCA	237	235	99%	234	234	99%
NEW CURRICULUM								
Freshmen	8/69	ESHS	343	320	93%	311	297	87%
Freshmen	8/69	CSQ 1	343	320	93%	318	301	88%
Freshmen	8/69	OPI	343	317	92%	315	308	90%
Freshmen	9/69	SCA	342	341	99%	341	341	99%
Freshmen (All)	5/70	SHS	324	315	97%	315	307	95%
Freshmen (A-F & K-O)	5/70	ENG	158	147	93%	133	133	84%
Freshmen (G-J & P-Z)	5/70	CSQ 2	166	156	94%	156	150	91%
Freshmen (All)	9/70	ESHS	382	380	99%	380	319	84%
Freshmen (A-E & K-O)	9/70	OPI	198	194	98%	193	158	80%
Freshmen (F-J & P-Z)	9/70	CSQ 1	184	183	99%	183	177	96%
Freshmen (All)	5/71	SHS	367	327	89%	327	316	86%
Freshmen (A-E & K-O)	5/71	ENG	190	164	86%	148	148	78%
Freshmen (F-J & P-Z)	5/71	CSQ 2	177	143	81%	143	138	78%
Sophomores (All)	5/71	SHS	284	225	79%	225	219	77%
Sophomores (A-F&K-O)	5/71	OPI	147	103	70%	100	96	65%
Sophomores (G-J&P-Z)	5/71	SCA	137	102	74%	100	100	73%
Seniors	5/71	SHS	210	135	64%	135	133	63%
Faculty & Staff	9/69	SHS	105	85	81%	85	84	80%
Faculty & Staff	5/70	SHS	104	79	76%	79	68	65%
Faculty & Staff	5/71	SHS	112	78	70%	78	77	69%

COLLEGE STUDENT QUESTIONNAIRES

The College Student Questionnaires (CSQ), part of the ETS Institutional Research Program for Higher Education, are designed to aid institutions to gather and analyze large amounts of diverse information about college student bodies. This information is primarily biographical and attitudinal. There are two questionnaires - Part 1 and Part 2 - with certain sections duplicated. The purpose in constructing partially overlapping instruments is to facilitate study of student change between college entrance and graduation.

The questionnaires were developed at Educational Testing Service (ETS) by Richard E. Peterson. The general content and item format were suggested by sociologist Martin Trow.

Part 1 of the CSQ is administered to entering students (freshmen) prior to the formal beginning of classes. The four sections of Part 1 contain questions about: 1) educational and vocational plans or expectations 2) activities, achievements, and perceptions during secondary school; 3) family background; 4) certain personal attitudes. Part 2 is administered to any group of undergraduates toward the close of the academic year. It is in three sections, two of which duplicate sections 1 and 4 from CSQ Part 1. The middle section of Part 2 consists of some 100 questions dealing with what might be called "student functioning," i.e., activities, perceptions, and satisfactions as students at a particular college.

Items: Each questionnaire contains 200 multiple-choice questions and, although the questionnaire itself is untimed, about an hour and a half is usually required for students to complete it. Every item in each questionnaire is intended to provide essentially unique information, and some type of analysis of individual item response frequencies will generally be the most expedient way of treating basic institutional results.

Scales: In addition to analysis at the item level, the questionnaires also are scored on 13 scales. With one exception, each scale consists of ten four-alternative items. These measures, five of which are duplicated in the last section of both questionnaires, are as follows:

CSQ Part 1 Only
MG Motivation for Grades
FS Family Social Status
(five nine-option items)

CSQ Part 2 Only

SF Satisfaction with Faculty
SA Satisfaction with Administration
SM Satisfaction with Major
SS Satisfaction with Students
SH Study Habits
EI Extracurricular Involvement

CSQ PART 1 AND Part 2

FI Family Independence
PI Peer Independence
L Liberalism
SC Social Conscience
CS Cultural Sophistication

Comparative Data: In order for an institution to readily compare its data with those of other colleges, data based on CSQ administrations during the past two years are printed on the Response Analysis Report in columns paralleling that of the institution.

Adapted from A Prospectus College Student Questionnaires.

Brief Definitions of Scales in the College Student Questionnaires

(MG) Motivation for Grades refers to a relatively strong desire--retrospectively reported--to earn good marks in secondary school. High MG scores represent the respondent's belief that others (e.g., teachers, classmates) regarded him as a hard worker, that the respondent, in his own estimation, studied extensively and efficiently, was capable of perseverance in school assignments, and considered good grades to be personally important. Low scores indicate lack of concern for high marks in secondary school.

(FS) Family Social Status is a measure of the socioeconomic status of the respondent's parental family. The scale is comprised of four questions, each having nine scaled alternatives. The four items have to do with: father's occupation, father's education, mother's education, and family income. Father's occupation is given a weight of three. Raw scores may range from 6 through 54.

(SF) Satisfaction with Faculty refers to a general attitude of esteem for instructors and the characteristic manner of student-faculty relationships at the respondent's college. Students with high scores regard their instructors as competent, fair, accessible, and interested in the problems of individual students. Low scores imply dissatisfaction with faculty and the general nature of student-faculty interaction.

(SA) Satisfaction with Administration is defined as a generally agreeable and uncritical attitude toward the college administration and administrative rules and regulations. High scores imply satisfaction with both the nature of administrative authority over student behavior and with personal interactions with various facets of the administration. Low scores imply a critical, perhaps contemptuous view of an administration that is variously held to be arbitrary, impersonal, and/or overly paternal.

(SM) Satisfaction with Major refers to a generally positive attitude on the part of the respondent about his activities in his field of academic concentration. High scores suggest not only continued personal commitment to present major field, but also satisfaction with departmental procedures, the quality of instruction received, and the level of personal achievement within one's chosen field. Low scores suggest an attitude of uncertainty and disaffection about current major field work.

(SS) Satisfaction with Students refers to an attitude of approval in relation to various characteristics of individuals comprising the total student body. High scores suggest satisfaction with the extent to which such qualities as scholastic integrity, political awareness, and particular styles and tastes are perceived to be characteristic of the student body. Low scores imply disapproval of certain characteristics that are attributed to the overall student body.

(SH) Study Habits refers to a serious, disciplined, planful orientation toward customary academic obligations. High scores represent a perception of relatively extensive time devoted to study, use of systematic study routines and techniques, and a feeling of confidence in preparing for examinations and carrying out other assignments. Low scores suggest haphazard, perhaps minimal, attempts to carry through on instructional requirements.

(EI) Extracurricular Involvement is defined as relatively extensive participation in organized extracurricular affairs. High scores denote support of and wide involvement in student government, athletics, religious groups, preprofessional clubs, and the like. Low scores represent disinterest in organized extracurricular activities.

(FI) Family Independence refers to a generalized autonomy in relation to parents and parental family. Students with high scores tend to perceive themselves as coming from families that are not closely united, as not consulting with parents about important personal matters, as not concerned about living up to parental expectations, and the like. Low scores suggest conformity to prevailing peer norms, sociability, extraversion, or other-directedness.

(PI) Peer Independence refers to a generalized autonomy in relation to peers. Students with high scores tend not to be concerned about how their behavior appears to other students, not to consult with acquaintances about personal matters, and the like. They might be thought of as unsociable, introverted, or inner-directed. Low scores suggest conformity to prevailing peer norms, sociability, extraversion, or other-directedness.

(L) Liberalism is defined as a political-economic-social value dimension, the nucleus of which is sympathy either for an ideology of change or for an ideology of preservation. Students with high scores (liberals) support welfare statism, organized labor, abolition of capital punishment, and the like. Low scores (conservatism) indicate opposition to welfare legislation, to tampering with the free enterprise system, to persons disagreeing with American political institutions, etc.

(SC) Social Conscience is defined as moral concern about perceived social injustice and what might be called "institutional wrongdoing" (as in government, business, unions). High scorers express concern about poverty, illegitimacy, juvenile crime, materialism, unethical business and labor union practices, graft in government, and the like. Low scores represent reported lack of concern, detachment, or apathy about these matters.

(CS) Cultural Sophistication refers to an authentic sensibility to ideas and art forms, a sensibility that has developed through knowledge and experience. Students with high scores report interest in or pleasure from such things as wide reading, modern art, poetry, classical music, discussions of philosophies of history, and so forth. Low scores indicate a lack of cultivated sensibility in the general area of the humanities.

Adapted from Peterson College Student Questionnaire: Technical Manual

Student Number___________

GENERAL SATISFACTION WITH HIRAM

I. Sex and location of your home (circle one number)

1. Male from the mideast (west of Appalachian Mountains)
2. Female from the mideast (west of Appalachian Mountains)
3. Male from the east coast
4. Female from the east coast
5. Male from the South, West, Foreign Country, or other location
6. Female from the South, West, Foreign Country, or other location

II. The next questions concern your general overall evaluation of the following aspects of Hiram College. Rate the components of the new curriculum on the basis of what you have observed and/or heard about them. Rate each question by circling in the appropriate place one of the following alternatives:

1. Very dissatisfied
2. Dissatisfied
3. Somewhat dissatisfied
4. Somewhat satisfied
5. Satisfied
6. Very satisfied

A.	The faculty	1	2	3	4	5	6
B.	The administration	1	2	3	4	5	6
C.	The students	1	2	3	4	5	6
D.	The town of Hiram and its location	1	2	3	4	5	6
E.	Your graduation requirements	1	2	3	4	5	6
F.	Your advisor	1	2	3	4	5	6
G.	The social life	1	2	3	4	5	6
H.	The physical facilities of the college	1	2	3	4	5	6
I.	Your courses this year	1	2	3	4	5	6
J.	The Freshman Institute	1	2	3	4	5	6
K.	The Freshman Colloquia program	1	2	3	4	5	6
L.	The Twentieth Century course	1	2	3	4	5	6
M.	The Activity Units program	1	2	3	4	5	6
N.	The Interdisciplinary course program	1	2	3	4	5	6
O.	The Area of Concentration program	1	2	3	4	5	6

Comments on or amplification of ratings --

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OMNIBUS PERSONALITY INVENTORY (FORM F) --- BRIEF SCALE DESCRIPTIONS

Thinking Introversion (TI): Persons scoring high on this measure are characterized by a liking for reflective thought and academic activities. They express interests in a broad range of ideas and in a variety of areas, such as literature, art and philosophy. Their thinking is less dominated by objective conditions and generally accepted ideas than that of thinking extroverts (low scorers). Most extroverts show a preference for overt action and tend to evaluate ideas on the basis of their practical, immediate application.

Theoretical Orientation (TO): This scale measures an interest in, or orientation to, a more restricted range of ideas than is true of TI. High scorers are interested in science and in some scientific activities, including a preference for using the scientific method in thinking. They are generally logical, analytical, and critical in their approach to problems.

Estheticism (Es): High scorers endorse statements indicating diverse interests in, as well as an appreciation of, artistic matters and activities. The focus of their interests tends to extend beyond painting, sculpture and music and includes interests in literature and dramatics.

Complexity (CO): This measure reflects an experimental orientation rather than a fixed way of viewing and organizing phenomena. High scorers are tolerant of ambiguities and uncertainties; they are generally fond of novel situations and ideas. Most high scorers very much prefer to deal with diversity and complexity, as opposed to simplicity and structure, and are disposed to seek out and enjoy unusual ambiguous events and experiences.

Autonomy (Au): The characteristic measured is composed of non-authoritarian attitudes and a need for independence. High scorers are sufficiently independent of authority, as traditionally imposed through social institutions, that they oppose infringements on the rights of individuals. They are tolerant of viewpoints other than their own, and they are nonjudgmental, realistic, and intellectually liberal.

Religious Orientation (RO): High scorers are skeptical of conventional religious beliefs and practices and tend to reject most of them, especially those that are orthodox or fundamentalistic in nature. Persons scoring near or above the mean are manifesting a liberal view of religious beliefs, and low scorers tend to be conservative in general and rejecting of other viewpoints. (The direction of scoring on this scale, with strong religious commitment indicated by low scores, was determined in part by the correlation between these items and the first four scales which together measure a general intellectual disposition.)

Social Extroversion (SE): This measure reflects a preferred style of relating to people in a social context. High scorers, displaying a strong interest in being with people, seek social activities and gain satisfaction from them. The social introvert (low scorers) tends to withdraw from social contacts and responsibilities.

Impulse Expression (IE): This scale assesses a general readiness to express impulses and to seek gratification either in conscious thought or in overt action. High scorers have an active imagination, value sensual reactions, and their thinking and behavior has pervasive overtones of feelings and fantasies.

Personal Integration (PI): The high scorer admits to few attitudes and behaviors that characterize anxious, disturbed or socially alienated persons. Low scorers on the other hand, may intentionally avoid others and often express hostility and aggressions. They also indicate feelings of loneliness, rejection, and isolation.

Anxiety Level (AL): High scorers deny that they have feelings or symptoms of anxiety and do not admit to being nervous or worried. Low scorers are generally tense and high-strung and often experience some difficulty adjusting in their social environment.

Altruism (Am): The high scorer is an affiliative person and trusting in his relations with others. He exhibits concern for the feelings and welfare of people he meets. Low scorers tend to be much less concerned about the welfare of others and often view people from an impersonal, distant perspective.

Practical Outlook (PO): The high scorer on this measure is interested in practical, applied activities and tends to value material possessions and concrete accomplishments. The criterion most often used to evaluate ideas and things is one of immediate utility. Authoritarianism, conservatism and non-intellectual interests are very frequent personality components of persons scoring above the average.

Masculinity-Femininity (MF): This scale assesses some of the differences in attitudes and interests between college men and women. Highscorers (masculine) deny interests in esthetic matters and they admit to few adjustment problems, feelings of anxiety, or personal inadequacies. They also tend to be somewhat less socially inclined than low scorers and more interested in scientific matters. Low scorers (feminine), besides stronger esthetic and social inclinations, also admit to greater sensitivity and emotionality.

Response Bias (RB): This measure represents an approach to assessing the students test-taking attitude. High scorers are responding to this measure in a manner similar to a group of students who were explicitly asked to make a good impression by their responses to these items. Low scorers, on the contrary, may be trying to make a bad impression.

Adapted from Herst and Yonge, Omnibus Personality Inventory: Form F.

ENGLISH COMPOSITION TEST

This test is part of the College Board Placement Test Program. It is designed to help colleges evaluate ability to write clear, effective English. The English Composition Test uses three different kinds of multiple-choice questions selected from the five kinds that are described below.

One kind of multiple-choice question consists of a sentence with four of its parts underlined and lettered. The student is required to decide either that one of the four underlined parts of the sentence is unacceptable or that the sentence has no error.

A second kind of question requires not so much the ability to identify unacceptable usage as to choose the best way of phrasing a sentence.

A third kind of question presents a sentence containing any one of four kinds of errors, or no error. No part of the sentence is underlined to call attention to possible errors, and no other versions are offered. If the sentence contains an error, the student classifies it according to the kind of error.

The fourth kind of question is based upon a brief prose passage from which a sentence has been omitted. After each passage several sentences are listed. First, the student judges which of these sentences could be inserted in the passage in order to preserve its style and meaning. After selecting the appropriate sentence or sentences, the student must determine why each of the remaining sentences is inappropriate.

The fifth kind of question presents a sentence that is correct and acceptable, but the student is required to rephrase one part in a way that will result in changes in the rest of the sentence. The change called for might be one that he would make in editing or revising something he had written. In his revision, he should stay as close as possible to the meaning and language of the original sentence.

Adapted from Achievement Tests
College Entrance Board

SURVEY OF COLLEGE ACHIEVEMENT

The Survey of College Achievement (SCA) is a research instrument designed to measure group academic achievement in each of the following areas of the liberal arts--English composition, humanities, mathematics, natural sciences, and social sciences-history. The five brief tests focus on the students' knowledge of facts and concepts, their ability to perceive relationships, and their understanding of basic principles in the liberal arts.

The Survey, which is offered by the Institutional Research Program for Higher Education, is one part of a program designed to aid colleges and universities interested in self-study and evaluation.

To facilitate the use of the SCA as an institutional research instrument, total testing time has been limited to 75 minutes. Each test in the Survey is 15 minutes long, and each student takes all five tests.

The content of the Survey tests is similar to that of courses taken in the first two years of college. Alternate forms of the SCA, comparable in content and difficulty, make it possible to measure the growth in student achievement from the time of admission through the sophomore year. While such testing measures have been available for the study of individual students, the Survey provides for the first time a measure of group achievement that can be quickly administered.

It is most important to remember that SCA was designed for the study of groups of students and therefore should not be used to evaluate individuals. The very features that make the survey useful for institutional research--the limited testing time and the breadth of areas covered--also make it inappropriate for the assessment of individual achievement. The Survey does allow an institution to make comparisons among groups of students and to identify group changes that take place from year to year.

In order to permit comparisons among test areas, all scores were scaled to a mean of 50 and a standard deviation of 10. The score scale was based on data collected from a 1963 testing administration involving approximately 2,600 second-semester sophomores from 179 institutions of higher education.

The students in the equating administration found the tests generally difficult and the Mathematics Test the most difficult of all. If a test were at middle difficulty for the group as a whole, the mean for the distribution of raw scores would approximate one-half the number of items. No raw score mean on any test was as high as the middle-difficulty value, and the Mathematics Tests means were low by more than one standard deviation unit. However, even though the tests were difficult, the distribution of individual scores for the national samples of freshmen and sophomores (1963 data) were reasonably symmetrical, indicating that the tests were appropriate in difficulty for these students. A comparison between students in the equating and norming groups, however, shows that the students in the norms samples were more able than those who participated in the equating administration.

Reliability coefficients, based on the 1968 administration of both forms of the Survey to 1,100 second-semester sophomores, are given in Table 1 below. They range from .57 on the Humanities Test, Form 2, to .77 on the English Composition Test, Form 1. Only one of the ten reliability coefficients is less than .67, and five are .70 or higher.

Results of the correlational study based on this same equating administration of the Survey are given in Table 2. The highest correlation (.62) exists between the Mathematics and Natural Sciences Tests and between the Natural Sciences and Social Sciences-History Tests--perhaps because both combinations of subjects require some similar and related skills. Conversely, the lowest correlation (.42) exists between the Mathematics and Humanities Tests. The median values of these coefficients are .57 for Form 1 and .51 for Form 2.

The national institutional norms for the Survey of College Achievement contain distributions of institutional means derived from data collected on approximately 2,600 second-semester sophomores and about the same number of second-semester freshmen who were tested during the spring sessions of 1963 and 1964, respectively. The colleges and universities in which they were enrolled had been selected with probability proportional to size within the various geographical areas of the country. This procedure gave each student rather than each institution an equal chance of being chosen.

APPENDIX 2 RESULTS SUPPLEMENT

I. Introductory Comments and Explanation of the Tables
II. Tables of Means, Standard Deviations and F Values
    A. Expected Satisfaction of Entering Freshmen
    B. Satisfaction of Freshmen in May
    C. Satisfaction with New Curriculum Components by Freshmen
    D. Changes in Satisfaction during the Freshman Year
    E. Satisfaction of Sophomores
    F. Satisfaction of Seniors
    G. Satisfaction of Faculty and Staff
    H. Satisfaction of Faculty and Staff with Components of the New Curriculum
    I. CSQ 2 Satisfaction of Freshmen
    J. CSQ 1 Attitudes of Entering Freshmen
    K. CSQ 2 Attitudes of Freshmen in May
    L. Changes in CSQ Attitudes during the Freshman Year
    M. OPI Intellectual Attitudes of Entering Freshmen
    N. OPI Social-Emotional Scores of Entering Freshmen
    O. OPI Intellectual Attitudes of Sophomores
    P. OPI Social-Emotional Score of Sophomores
    Q. Changes in English Scores from High School to Freshman Year
    R. Analysis of Scores of All Freshmen Who Took English Test
    S. Survey of College Achievement Scores of Sophomores
    T. Analysis of Covariance of Sophomore SCA Scores
    U. CSQ Scale Scores for Five Other Colleges

Introductory Comments and Explanation of the Tables

The tables which follow provide supplementary and backup data for the tables and discussion presented in the Results and Conclusions sections of the paper. These tables are arranged so that the satisfaction data are first; then the CSQ, OPI, English, and SCA data follow in that order. Within these groups entering freshman data are followed by data for end of year freshmen, sophomores, seniors, and faculty, respectively. In general, this is the same order as the discussion in the preceding text.

About half of these appendix 2 tables expand on tables in the results section. For example, Table 3 corresponds to Table A here. However, Table 3 did not contain the standard deviations or the F values. Table A provides these numbers and the results of several additional analyses of variance.[1] The tables in the Results section indicated whether or not the means of each year were significantly different from the corresponding means of the other two years. In Table A there are also a) the results of the multivariate analysis for each of the above comparisons; b) the multivariate and univariate tests for the analysis of variance of all three years at once; and c) the multivariate and univariate tests for the comparisons of the old curriculum year versus the two new curriculum years combined.

Tables E, F, G, H, L, M, N, R, T and U provide data which were discussed in the text of the Results section, but did not have tables there. Thus, these data are found only in this appendix.

It would probably be helpful to describe the contents of the tables in more detail. Tables A through Q are quite similar in format. The top half of each table presents the means and standard deviations for each of the variables considered.[2] The number of subjects (N) who had complete data (valid scores on all the variables) is also provided. For example, in Table A, you can see that there were 298 entering freshmen who answered all nine satisfaction items in September of 1968. Their average or mean rating of satisfaction with the faculty was 5.19 (on a 6 point scale) with a standard deviation of .72. The mean and standard deviation for freshmen entering in 1969 were 5.21 and .73. The rest of the top part of the table reads similarly.

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[1] All the analyses were done on the Hiram College IBM 1130 computer using a program written by Hughes, LaRue and Yost titled, MANOVA: Multivariate Analysis of Variance on Small Computers. The program is copyrighted and distributed by Dean J. Clyde, Clyde Computing Service Box 166, Coconut Grove, Miami, Florida 33133.

[2] The MANOVA program cannot handle more than ten variables at once. Therefore, it was necessary to split the items of the two longer instruments (Satisfaction and OPI) into two groups and analyze them separately. These separate analyses are shown as separate tables.

The bottom half of Table A presents the F values resulting from the various analyses of variance. Statistically significant F values are marked with asterisks. That is, differences between mean values which would occur by chance less than 5 or 1 percent of the time have, respectively, one or two asterisks next to the F value.

The first column refers to the "overall" analysis of variance, which tells whether there were differences between the three groups of entering freshmen, 1968, 1969, and 1970. The first entry, F=6.71**, gives the multivariate F test, which indicates that these three groups differed significantly with respect to one or more of the nine variables, faculty, administration, students, etc. The entry (18,806) gives the degrees of freedom for this F test. The third entry, F=3.42*, is the F test from the univariate analysis of variance on the ratings of expected Satisfaction with the faculty by the three groups of entering freshmen. The statistic shows that the mean rating of these groups on this variable differed significantly at the 5% level. The other numbers in the first column can be interpreted in a similar fashion, except for the bottom line which provides the degrees of freedom (2 and 911) for each of the nine variables.

The second column provides similar data for comparisons of the 1968 and 1969 entering freshmen. Likewise, the third and fifth columns compare pairs of means which are clearly labeled. In the fourth column, the 1968 old curriculum entering freshmen are compared to the combined average of the 1969 and 1970 new curriculum groups.

Most of the other tables follow this general format. Tables D, L and Q differ in that the means shown are of the differences between the scores of entering and year-end freshmen who completed both measures. That is, they indicate the average change during the freshman year. Certain tables (E, F, H, M, N, O, P, S, and T) are similar, but less complex, because there are only two years or groups involved and, thus, only one multivariate and one set of univariate analyses.

Table Q is basically the presentation and analysis of data about changes in CEEB English Achievement scores from the high school senior year to the end of the freshman year in college, for students who have taken both tests. In addition, students' average percentile rank in their high school classes and their average SAT verbal test scores are given. The overall analysis of variance indicates that there were no significant differences between the three years, except for the English change scores. The special pair contrast are only shown for the English change data. They indicate that there was a mere positive change in both new curriculum years than in the old curriculum year.

Table R is a somewhat different analysis of the English achievement data. The top quarter (part 1 a) of the table provides the means and S.D.s for all students who took the English test as freshmen, even those who had not taken it in high school. The F tests shown in part lb indicate that there was a highly significant regression, i.e., the covariates are significantly correlated with the criterion (English). The adjustments which resulted from the analysis of covariance provide a more sensitive test of the means, which produced a significant difference between the 1969 and 1971 groups.

Table S provides the analysis of the SCA data without considering covariates, e.g., scores at entrance to college. Table T provides covariance analyses. Using the high school percentile and SAT verbal as covariates for SCA English, Humanities, and Social Science, we find highly significant F values for the within cells regression, i.e., the covariates are correlated with the criteria and do make a difference in the analysis. However, the adjusted means do not differ significantly. The bottom section of the table shows a similar analysis using high school percentile and SAT math as covariates for SCA natural science and math. Again the regression values are significant, and, although the unadjusted means had not differed (Table S), the two groups adjusted for covariates now differ significantly on the SCA mathematics scale.

The final Table, U, provides an approximation of mean change in CSQ raw scale scores for the national norm group, three groups of Hiram freshmen, and the five other colleges which supplied data about their 1969-70 freshmen. That is, this table indicates the direction and magnitude of changes on CSQ scales during the freshman year in college.

TABLE A.

Means, and Standard Deviationsand F Values for 1968, 1969, and 1970 Entering Freshmen on Expected Satisfaction with Various Aspects of Hiram College [1]

	Sept. 1968		Aug. 1969		Sept. 1970	
N=	298		297		319	
	M	SD	M	SD	M	SD
Faculty	5.19	0.72	5.21	0.73	5.34	0.85
Administration	5.03	0.81	5.03	0.76	5.13	0.92
Students	4.91	0.92	5.04	0.79	4.80	0.97
Town	4.10	1.28	4.35	1.23	4.32	1.31
Requirements	4.38	1.20	4.96	0.74	4.89	0.90
Adviser	5.12	1.16	5.03	0.76	5.11	0.82
Social life	4.19	1.07	4.46	0.97	4.38	1.14
Physical facilities	5.04	0.91	5.12	0.82	5.08	0.91
Courses	4.76	0.81	5.03	0.76	5.02	0.94

	Overall	Special Paired Contrasts			
	1968 1969& 1970	1968 vs 1969	1968 vs 1970	Old vs New	1969 vs 1970
Multivariate F Tests	6.71**	9.45**	8.20**	10.77**	2.80**
degrees of freedom	(18,1806)	(9,903)	(9,903)	(9,903)	(9,903)
Univariate F Tests					
Faculty	3.42*	0.08	5.67*	2.44	4.40*
Administration	1.26	0.00	1.87	0.65	1.86
Students	5.54**	3.16	2.31	0.01	11.07**
Town	3.48*	5.86*	4.56*	6.86**	0.11
Requirements	31.84**	53.22**	42.15**	62.82**	0.87
Adviser	0.78	1.22	0.00	0.43	1.12
Social life	5.28**	10.09**	4.84*	9.49**	1.07
Physical facilities	0.63	1.25	0.29	0.90	0.36
Courses	10.16**	15.89**	14.73**	20.28**	0.05
d.f. per contrast	(2,911)	(1,911)	(1,911)	(1,911)	(1,911)

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* $p < .05$

**$p < .01$

[1] Ratings could range from 1.0 for very dissatisfied to 6.0 for very satisfied.

TABLE B

Means, Standard Deviations, and F Values for Comparisons of End of Freshman Year Satisfaction with Hiram[1]

	May 1969		May 1970		May 1971	
N=	246		307		316	
	M	SD	M	SD	M	SD
Faculty	4.32	1.02	5.04	0.93	5.08	0.80
Administration	4.20	1.19	4.71	1.16	4.22	1.11
Students	4.11	1.23	4.37	1.13	4.36	1.18
Town	3.50	1.52	3.80	1.45	3.73	1.40
Requirements	4.28	1.28	4.78	0.85	4.69	0.96
Adviser	4.24	1.57	4.65	1.38	4.72	1.30
Social Life	3.54	1.42	3.73	1.26	3.74	1.30
Physical facilities	4.38	1.28	4.62	1.02	4.30	1.09
Courses	3.87	1.22	4.56	1.07	4.50	1.01

	Overall	Special Paired Contrasts			
	1969 1970& 1971	1969 vs 1970	1969 vs 1971	1970 vs 1971	Old vs New
Multivariate F tests	11.28**	12.11**	16.93**	5.96**	16.97**
degrees of freedom	(18,1716)	(9,858)	(9,858)	(9,858)	(9,858)
Univariate F Tests					
Faculty	58.40**	85.76**	95.95**	0.25	116.55**
Administration	18.93**	27.14**	0.04	28.68**	9.18**
Students	4.18*	6.58**	6.46*	0.00	8.37**
Town	3.21*	6.01*	3.60	0.37	6.05*
Requirements	17.96**	32.20**	22.75**	1.00	34.92**
Adviser	9.12**	11.61**	16.32**	0.42	17.83**
Social life	1.85	2.69	0.06	0.01	3.69
Physical facilities	6.55**	6.08*	0.67	12.27**	0.83
Courses	32.88**	55.33**	46.71**	0.48	65.28**
d.f. per contrast	(2,866)	(1,866)	(1,866)	(1,866)	(1,866)

---

* $p < .05$
** $p < .01$

[1] Ratings could range from 1.0 for very dissatisfied to 6.0 for very satisfied.

TABLE C.
Means, Standard Deviations, and F Values for Comparisons of End of Freshman Year Satisfaction with the Components of the New Curriculum[1]

	May 1970		May 1971	
N=	143		273	
	M	SD	M	SD
Institute	4.52	1.16	4.66	1.27
Colloquia	4.38	1.21	4.78	1.26
20th Century Course	3.81	1.32	3.53	1.39
Activity Units	4.08	1.15	4.45	1.21
Interdisciplinary Courses	4.43	0.88	4.65	0.92
Area of Concentration	4.84	0.90	5.01	0.90

	1970 vs 1971
Multivariate F test	5.07**
degrees of freedom	(6,409)
Univariate F tests	
Institute	1.24
Colloquia	9.34**
20th Century Course	3.97*
Activity Units	9.23**
Interdisciplinary Courses	5.28*
Area of Concentration	3.41
d. f. per contrast	(1,414)

---

* $p < .05$
**$p < .01$

[1] Ratings could range from 1.0 for very dissatisfied to 6.0 for very satisfied.

TABLE D.

Means, Standard Deviations and F Values for Comparisons of Changes in Freshman Satisfaction with Various Aspects of Hiram during 1968-69, 1969-70, and 1970-71

	Change in 1968-69		Change in 1969-70		Change in 1970-71	
N=	228		247		225	
	M	SD	M	SD	M	SD
Faculty	-0.91	1.15	-0.12	1.01	-0.26	1.08
Administration	-0.90	1.27	-0.27	1.20	-0.96	1.35
Students	-0.87	1.32	-0.64	1.23	-0.38	1.25
Town	-0.51	1.51	-0.50	1.47	-0.54	1.44
Requirements	-0.07	1.49	-0.18	0.93	-0.17	1.09
Adviser	-0.92	1.65	-0.37	1.55	-0.40	1.56
Social life	-0.62	1.47	-0.68	1.47	-0.65	1.44
Physical facilities	-0.61	1.30	-0.48	1.12	-0.78	1.17
Courses	-0.86	1.38	-0.45	1.27	-0.49	1.21

	Overall	Special Paired Contrasts			
	1968-69 1969-70 1970-71	1968-69 vs 1969-70	1968-69 vs 1970-71	Old vs New	1969-70 vs 1970-71
Multivariate F tests	8.70**	10.21**	10.26**	11.66**	5.84**
degrees of freedom	(18,1378)	(9,689)	(9,689)	(9,689)	(9,689)
Univariate F tests					
Faculty	35.31**	63.42**	40.42**	68.50**	2.11
Administration	21.48**	28.83**	0.26	8.51**	34.45**
Students	8.52**	3.73	17.00**	11.84**	5.19*
Town	0.04	0.00	0.04	0.01	0.07
Requirements	0.56	0.90	0.78	1.12	0.00
Adviser	8.77**	14.18**	12.22**	17.51**	0.04
Social life	0.11	0.21	0.05	0.16	0.05
Physical facilities	3.81*	1.43	2.35	0.02	7.59**
Courses	7.16**	12.05**	9.38**	14.21**	0.11
d.f. per contrast	(2,697)	(1,697)	(1,697)	(1,697)	(1,697)

---

* $p < .05$

** $p < .01$

TABLE E.

Means, Standard Deviations and F Values for Comparisons of Old and New Curriculum Sophomore Satisfaction Ratings[1]

	Old Curriculum May 1969		New Curriculum May 1971	
N=	217		219	
	M	SD	M	SD
Faculty	4.16	1.01	4.84	0.89
Administration	3.87	1.34	4.07	1.21
Students	3.78	1.23	4.31	1.03
Town	3.65	1.46	3.74	1.40
Requirements	4.09	1.26	4.70	0.92
Adviser	4.59	1.45	4.90	1.11
Social life	3.50	1.33	3.65	1.31
Physical facilities	4.25	1.20	4.40	1.06
Courses	3.47	1.24	4.66	0.94

	1969 vs 1971
Multivariate F test	18.61**
degrees of freedom	(9,426)
Univariate F tests	
Faculty	55.52**
Administration	2.61
Students	23.96**
Town	0.43
Requirements	33.59**
Adviser	6.45*
Social life	1.50
Physical facilities	1.87
Courses	129.01**
d.f. per contrast	(1,434)

---

* $p < .05$

** $p < .01$

[1] Ratings could range from 1.0 for very dissatisfied to 6.0 for very satisfied.

TABLE F.

Means, Standard Deviations, and F Values for Comparisons of Senior Satisfaction with Various Aspects of Hiram in May 1969 and May 1971[1]

	May 1969		May 1971	
N=	213		133	
	M	SD	M	SD
Faculty	4.30	1.03	4.74	0.98
Administration	4.24	1.17	3.87	1.23
Students	3.97	1.22	4.04	1.07
Town	3.47	1.47	3.92	1.43
Requirements	3.46	1.37	4.28	1.08
Adviser	4.72	1.35	4.66	1.45
Social life	3.92	1.25	3.45	1.41
Physical facilities	4.38	1.15	4.24	1.16
Courses	3.20	1.37	4.59	1.07

	1969 vs 1971
Multivariate F Tests	18.38**
degrees of freedom	(9,336)
Univariate F Tests	
Faculty	16.03**
Administration	7.92**
Students	0.26
Town	7.79**
Requirements	33.78**
Adviser	0.16
Social life	10.42**
Physical facilities	1.12
Courses	97.72**
d.f. per contrast	(1,344)

---

* $p < .05$

** $p < .01$

[1] Ratings could range from 1.0 for very dissatisfied to 6.0 for very satisfied.

TABLE G

Means, Standard Deviations, and F Values for Comparisons of Faculty and Staff Satisfaction with Various Aspects of Hiram College in September 1969, May 1970, and May 1971 [1]

	Sept. 1969		May 1970		May 1971	
N=	84		68		77	
	M	SD	M	SD	M	SD
Faculty	4.23	1.06	4.25	1.08	4.55	0.93
Administration	4.45	1.16	4.32	1.06	4.34	1.07
Students	4.32	0.89	4.09	0.96	4.29	0.94
Requirements	4.62	0.96	4.60	0.93	4.48	1.05
Town	4.29	1.32	4.35	1.21	4.51	1.35
Physical facilities	4.52	1.14	4.54	1.15	4.68	1.27

	Overall	Special Paired Contrasts			
	1969 1970& 1971	1969 vs 1970	1969 vs 1971	1970 vs 1971	1969 vs 70&71
Multivariate F Tests	1.56	0.81	2.43*	1.41	1.73
degrees of freedom	(12,442)	(6,221)	(6,221)	(6,221)	(6,221)
Univariate F Tests					
Faculty	2.34	0.02	3.91*	3.01	1.66
Administration	0.33	0.52	0.44	0.01	0.65
Students	1.32	2.36	0.06	1.63	1.01
Requirements	0.46	0.01	0.80	0.56	0.36
Town	0.60	0.10	1.16	0.50	0.70
Physical facilities	0.37	0.01	0.65	0.44	0.31
d.f. per contrast	(2,226)	(1,226)	(1,226)	(1,226)	(1,226)

---

* $p < .05$

** $p < .01$

[1] Ratings could range from 1.0 for very dissatisfied to 6.0 for very satisfied.

TABLE H

Means, Standard Deviations, and F Values for Comparisons of Faculty and Staff Satisfaction with Components of the New Curriculum in September 1969, May 1970, and May 1971 [1]

	Expected Sept. 1969		Actual May 1970		Actual May 1971	
N=	77		67		69	
	M	SD	M	SD	M	SD
Institute	4.61	1.09	4.72	0.93	4.46	1.18
Colloquia	4.90	1.07	4.57	1.05	4.80	1.13
20th Century Course	5.00	1.03	3.88	1.15	3.35	1.22
Activity Units	4.12	1.36	3.96	1.16	4.01	1.27
Interdisciplinary Courses	3.96	1.24	4.24	1.02	4.42	1.10
Area of Concentration	4.96	0.70	4.63	0.85	4.83	1.00

	Overall	Special Paired Contrasts			
	1969 1970& 1971	1969 vs 1970	1969 vs 1971	1970 vs 1971	Expected vs Actual
Multivariate F Tests	10.64**	11.32**	20.02**	3.17**	20.23**
degrees of freedom	(12,410)	(6,205)	(6,205)	(6,205)	(6,205)
Univariate F Tests					
Institute	0.95	0.35	0.68	1.87	0.02
Colloquia	1.71	3.30	0.30	1.53	1.89
20th Century Course	40.87**	35.09**	77.63**	7.54**	74.21**
Activity Units	0.30	0.58	0.24	0.07	0.53
Interdisciplinary Courses	3.07*	2.17	6.02*	0.88	5.27*
Area of Concentration	2.77	5.51*	0.91	1.86	3.68
d.f. per contrast	(2,210)	(1,210)	(1,210)	(1,210)	(1,210)

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* $p < .05$

** $p < .01$

[1] Ratings could range from 1.0 for very dissatisfied to 6.0 for very satisfied.

TABLE I

Means, Standard Deviations and F Values for Comparisons CSQ 2 Freshman Satisfaction in 1969, 1970, and 1971[1]

	May 1969		May 1970		May 1971	
N=	132		154		142	
	M	SD	M	SD	M	SD
Faculty	25.90	4.78	29.34	5.08	29.12	4.36
Administration	27.27	5.33	29.97	5.08	27.15	4.75
Students	25.22	4.68	28.09	4.01	27.96	4.98

	Overall	Special Paired Contrasts			
	1969 1970& 1971	1969 vs 1970	1969 vs 1971	1970 vs 1971	Old vs New
Multivariate F Tests	14.93**	17.39**	18.81**	9.29**	20.80**
degrees of freedom	(6,846)	(3,423)	(3,423)	(3,423)	(3,423)
Univariate F Tests					
Faculty	22.49**	37.12**	31.34**	0.16	44.82**
Administration	14.74**	20.31**	0.04	22.98**	6.51*
Students	17.36**	28.23**	24.70**	0.06	34.66**
d. f. per contrast	(2,425)	(1,425)	(1,425)	(1,425)	(1,425)

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* $p < .05$

** $p < .01$

[1] CSQ scale scores vary from 10 to 40 with the national average for most scales in the mid twenties and standard deviations of about five.

TABLE J

Means, Standard Deviations and F Values for Comparisons of Freshman Ratings on CSQ 1 Attitude Scales in September 1968, August 1969, and September 1970[1]

	Sept. 1968		Aug. 1969		Sept. 1970	
N=	274		301		177	
	M	SD	M	SD	M	SD
Family Independence	23.32	5.76	23.94	5.14	25.26	5.56
Peer Independence	24.67	4.74	24.91	4.26	24.72	4.06
Liberalism	27.02	5.35	27.46	5.64	29.03	5.60
Social Conscience	29.79	4.93	28.87	4.60	29.89	4.30
Cultural Sophistication	23.92	5.35	23.19	5.18	23.23	5.31
Motivation for Grades	24.53	5.21	24.46	5.43	23.63	5.40

	Overall	Special Paired Contrasts			
	1968 1969& 1970	1968 vs 1969	1968 vs 1970	1969 vs 1970	Old vs New
Multivariate F Tests	3.85**	2.54*	6.04**	3.40**	4.33**
degrees of freedom	(12,1488)	(6,744)	(6,744)	(6,744)	(6,744)
Univariate F Tests					
Family Independence	6.83**	1.88	13.55**	6.45*	7.21**
Peer Independence	0.23	0.42	0.02	0.19	0.26
Liberalism	7.48**	0.90	14.24**	9.04**	5.93*
Social Conscience	3.85*	5.57*	0.05	5.37*	2.34
Cultural Sophistication	1.59	2.72	1.81	0.01	3.16
Motivation for Grades	1.78	0.03	3.06	2.68	0.88
d. f. per contrast	(2,749)	(1,749)	(1,749)	(1,749)	(1,749)

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* $p < .05$

** $p < .01$

[1] CSQ scale scores vary from 10 to 40 with the national average for most scales in the mid twenties and standard deviations of about five.

TABLE K

Means, Standard Deviations and F Values for Comparisons of Freshman Ratings on CSQ 2 Attitude Scales in May 1969, May 1970, and May 1971[1]

	May 1969		May 1970		May 1971	
N=	198		150		138	
	M	SD	M	SD	M	SD
Family Independence	23.91	5.81	24.77	5.00	26.06	4.69
Peer Independence	24.67	4.03	24.59	4.29	25.28	4.08
Liberalism	27.78	5.66	30.73	5.50	30.38	5.29
Social Conscience	30.09	4.97	30.87	4.61	30.51	4.64
Cultural Sophistication	24.48	5.17	24.60	5.42	25.30	4.99

	Overall	Special Paired Contrasts			
	1969 1970& 197i	1969 vs 1970	1969 vs 1971	Old vs New	1970 vs 1971
Multivariate F Tests	4.28**	5.84**	4.92**	6.87**	1.75
degrees of freedom	(10,958)	(5,479)	(5,479)	(5,479)	(5,479)
Univariate F Tests					
Family Independence	6.74**	2.24	13.47**	9.16**	4.32*
Peer Independence	1.20	0.03	1.77	0.44	1.96
Liberalism	15.14**	24.47**	18.21**	30.00**	0.28
Social Conscience	1.16	2.29	0.66	1.94	0.39
Cultural Sophistication	1.10	0.04	2.02	0.89	1.32
d. f. per contrast	(2,483)	(1,483)	(1,483)	(1,483)	(1,483)

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* $p < .05$

** $p < .01$

[1] CSQ scale scores vary from 10 to 40 with the national average for most scales in the mid twenties and standard deviations of about five.

TABLE L

Means, Standard Deviations, and F Values for CSQ Freshman Attitude Change from September to May of 1968-69, 1969-70, and 1970-71

	1968-69 Change		1969-70 Change		1970-71 Change	
N=	185		123		120	
	M	SD	M	SD	M	SD
Family Independence	+1.25	4.53	+1.12	4.40	+0.48	3.68
Peer Independence	+0.37	4.06	-0.06	3.99	+0.18	3.65
Liberalism	+1.49	4.64	+3.33	4.11	+1.62	3.15
Social Conscience	+0.64	4.23	+1.97	3.78	+0.34	3.38
Cultural Sophistication	+1.34	3.47	+1.62	3.72	+2.02	3.23

	Overall	Special Paired Contrasts			
	1968-69 1969-70& 1970-71	1968-69 vs 1969-70	1968-69 vs 1970-71	1969-70 vs 1970-71	Old vs New
Multivariate F Tests	3.27**	4.39**	1.49	4.15**	2.43*
degrees of freedom	(10,842)	(5,421)	(5,421)	(5,421)	(5,421)
Univariate F Tests					
Family Independence	1.29	0.07	2.42	1.39	1.18
Peer Independence	0.43	0.86	0.16	0.23	0.64
Liberalism	8.29**	14.72**	0.07	10.45**	6.13*
Social Conscience	6.28**	8.61**	0.44	10.67**	1.90
Cultural Sophistication	1.37	0.47	2.75	0.80	1.95
d. f. per contrast	(2,425)	(1,425)	(1,425)	(1,425)	(1,425)

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* $p < .05$

** $p < .01$

TABLE M

Means, Standard Deviations, and F Values for Comparisons of Freshman OPI Intellectual Attitude Scores in August 1969 and September 1970 (All students taking OPI - including those which were incomplete) (In Standard Score Units)[1]

	Aug. 1969		Sept. 1970	
N=	315		193	
	M	SD	M	SD
Thinking Introversion	49.30	9.47	50.12	8.86
Theoretical Orientation	48.52	9.00	47.23	9.20
Estheticism	50.83	10.04	51.03	9.29
Complexity	53.58	10.62	54.05	10.32
Autonomy	53.84	8.70	55.13	8.49
Religious Liberalism	53.23	8.14	53.54	8.28

	1969 vs 1970
Multivariate F Tests	1.60
degrees of freedom	(6,501)
Univariate F Tests	
Thinking Introversion	0.95
Theoretical Orientation	2.42
Estheticism	0.05
Complexity	0.24
Autonomy	2.71
Religious Liberalism	0.18
d. f. per contrast	(1,506)

---

* $p < .05$

** $p < .01$

[1] The national norm for each scale has a mean of 50 and an SD of 10.

TABLE N

Means, Standard Deviations, and F Values for Comparisons of Freshman OPI Social-Emotional Scale Scores in August 1969 and September 1970

(All students taking OPI - including those which were incomplete)
(In Standard Score Units)[1]

	Aug. 1969		Sept. 1970	
N=	315		193	
	M	SD	M	SD
Social Extroversion	47.27	10.38	46.70	9.71
Impulse Expression	52.67	10.31	52.79	10.69
Personal Integration	50.80	9.58	49.77	9.47
Lack of Anxiety	49.90	9.58	49.23	9.56
Altruism	50.36	9.73	50.51	9.63
Practical Outlook	46.21	9.15	45.61	9.29
Femininity-Masculinity	47.11	10.48	46.15	9.71
Response Bias	47.75	9.62	46.91	9.19

	1969 vs 1970
Multivariate F Tests	0.31
degrees of freedom	(8,499)
Univariate F Tests	
Social Extroversion	0.38
Impulse Expression	0.02
Personal Integration	1.40
Lack of Anxiety	0.58
Altruism	0.03
Practical Outlook	0.51
Feminity-Masculinity	1.08
Response Bias	0.95
d. f. per contrast	(1,506)

---

* $p < .05$

** $p < .01$

[1] The national norm for each scale has a mean of 50 and an SD of 10.

TABLE O

Means, Standard Deviations and F Values for Comparisons of Sophomore OPI Intellectual Attitude Scale Scores in May 1969 and May 1971
(Complete OPI's Only)
(In Standard Score Units)[1]

	May 1969		May 1971	
N=	198		96	
	M	SD	M	SD
Thinking Introversion	48.31	9.51	51.10	8.59
Theoretical Orientation	46.73	9.53	49.97	9.26
Estheticism	51.47	9.01	52.14	9.45
Complexity	52.60	10.84	56.04	11.12
Autonomy	56.09	7.96	58.50	8.85
Religious Liberalism	55.98	7.11	55.67	7.45

	1969 vs 1971
Multivariate F Tests	3.07
degrees of freedom	(6,287)
Univariate F Tests	
Thinking Introversion	5.95*
Theoretical Orientation	7.62**
Estheticism	0.34
Complexity	6.43*
Autonomy	5.52*
Religious Liberalism	0.13
d. f. per contrast	(1,292)

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* $p < .05$
** $p < .01$

[1] The national norm for each scale has a mean of 50 and an SD of 10.

TABLE P

Means, Standard Deviations and F Values for Comparisons of Sophomore OPI Social-Emotional Scale Scores in May 1969 and May 1971
(Complete OPI's Only)
(In Standard Score Units)[1]

	May 1969		May 1971	
N=	198		96	
	M	SD	M	SD
Social Extroversion	45.59	9.58	45.73	8.57
Impulse Expression	55.57	9.79	55.56	9.97
Personal Integration	48.88	8.62	51.35	9.72
Lack of Anxiety	47.48	9.19	50.03	9.23
Altruism	49.25	8.98	50.79	9.05
Practical Outlook	47.10	8.94	42.80	8.17
Femininity-Masculinity	47.04	8.91	45.94	8.83
Response Bias	45.10	8.14	48.61	9.79

	1969 vs 1971
Multivariate F Tests	3.78**
degrees of freedom	(8,285)
Univariate F Tests	
Social Extroversion	0.02
Impulse Expression	0.00
Personal Integration	4.88*
Lack of Anxiety	4.97*
Altruism	1.89
Practical Outlook	15.81**
Femininity-Masculinity	1.00
Response Bias	10.56**
d. f. per contrast	(1,292)

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* $p < .05$

** $p < .01$

[1] The national norm for each scale has a mean of 50 and an SD of 10.

TABLE Q

Means, Standard Deviations and F Values for Comparisons of the Changes from High School to End of Freshman Year Achievement in English Composition for Students Entering Hiram in 1968, 1969 and 1970 (Only Students with both the High School and College English Tests)

	Freshmen Who Entered in 1968		Freshmen Who Entered in 1969		Freshmen Who Entered in 1970	
N=	109		72		70	
	M	SD	M	SD	M	SD
High School Percentile	70.56	25.19	70.65	23.05	72.59	17.31
SAT Verbal	549.39	89.48	538.15	81.17	555.19	85.76
High School English	543.27	99.31	515.39	85.72	542.27	87.15
College English	534.02	95.35	527.18	94.13	555.17	90.53
Change (College English minus H. S. English)	-9.25	62.12	+11.79	51.65	+12.90	59.36

	Overall	Special Paired Contrasts			
	1969 1970& 1971	1968 vs 1969	1968 vs 1970	Old vs New	1969 vs 1970
Multivariate F Tests	1.23				
degrees of freedom	(10,488)				
Univariate F Tests					
High School Percentile	0.20				
SAT Verbal	0.73				
High School English	2.28				
College English	1.75				
Change in English	4.20*	5.62*	6.47*	8.64**	0.03
d. f. per contrast	(2,248)	(1,249)[a]	(1,249)[a]	(1,249)[a]	(1,249)[a]

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[a] One additional subject had both English scores, but no SAT's, and is included in the analysis of the special paired contrast of change in English scores.

* $p < .05$
** $p < .01$

TABLE R
Means, Standard Deviations, and F Values for Comparison of Freshman Scores on CEEB English Composition Test in 1969, 1970 and 1971

1. Analysis for All Freshmen Who Took the English Test

a. Means and Standard Deviations

	May 1969		May 1970		May 1971	
N=	201		133		148	
	M	SD	M	SD	M	SD
English Comp.	517.71	95.73	519.54	98.04	533.97	99.16

b. Analysis of Variance - F Values

	Overall	Special Paired Contrasts			
	1969 1970& 1971	1969 vs 1970	1969 vs 1971	Old vs New	1970 vs 1971
English Comp.	1.32	0.03	2.37	1.10	1.54
d. f. per contrast	(2,479)	(1,479)	(1,479)	(1,479	(1,479)

2. Analysis for Freshmen Who Took English Test and Had Covariates

a. Means and Standard Deviations

	Freshmen Who Entered in 1968		Freshmen Who Entered in 1970		Freshmen Who Entered in 1971	
N=	201		133		144	
	M	SD	M	SD	M	SD
High School Percentile	72.13	23.74	71.40	22.48	74.84	17.57
SAT Verbal	524.64	93.05	521.74	89.50	526.73	96.70
College English Comp.	517.71	95.73	519.54	98.04	536.98	98.19

b. Analysis of Covariance - F Values

	Overall	Special Paired Contrasts			
	1969 1970& 1971	1969 vs 1970	1969 vs 1971	Old vs New	1970 vs 1971
Regression	302.61**	302.61**	302.61**	302.61**	302.61**
degrees of freedom	(2,473)	(2,473)			
Adjusted Eng. Comp.	2.48	0.39	4.88*	2.95	2.03
degrees of freedom	(2,473)	(1,473)	(1,473)	(1,473)	(1,473)

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* $p < .05$
** $p < .01$

TABLE S
Means, Standard Deviations and F Values for Comparisons of Old and New Curriculum Sophomores on the Survey of College Achievement (In Standard Score Units)[1]

	May 1969		May 1971	
N=	233		100	
	M	SD	M	SD
English	51.54	8.89	49.80	8.98
Natural Science	52.13	8.68	50.18	8.66
Mathematics	50.66	8.73	51.60	7.79
Humanities	54.51	8.51	52.47	9.21
Social Science	52.00	8.76	52.12	8.69

	1969 vs 1971
Multivariate F Tests	2.57*
degrees of freedom	(5,327)
Univariate F Tests	
English	2.67
Natural Science	3.53
Mathematics	0.87
Humanities	3.83
Social Science	0.01
d. f. per contrast	(1,331)

$* \; p < .05$
$** p < .01$

[1] The national norms for each scale have a mean of 50 and an SD of 10.

TABLE T

Means, Standard Deviations and F Values for Analyses of Covariance on Comparisons of Old and New Curriculum Sophomores on the Survey of College Achievement

1. Means and Standard Deviations

	May 1969		May 1971	
N=	211		90	
	M	SD	M	SD
High School Percentile	76.29	19.84	71.76	19.88
SAT Verbal	526.91	82.60	512.32	81.68
SAT Mathematics	548.73	85.25	544.34	74.51
SCA English	51.73	8.87	50.31	8.90
SCA Humanities	54.80	8.41	52.60	9.20
SCA Social Science	52.49	8.58	52.34	8.33
SCA Natural Science	52.40	7.88	50.81	8.44
SCA Mathematics	50.92	8.87	52.29	7.57

2. Analysis of Covariance Using H.S. Percentile and SAT Verbal as Covariates

	F Values for Within cells Regression	F Values for Adjusted Means
SCA English	74.47**	0.07
SCA Humanities	82.77**	2.18
SCA Social Science	47.37**	0.47
d. f. per contrast	(2,297)	(1,297)

3. Analysis of Covariance Using H. S. Percentile and SAT Math as Covariates

	F Values for Within cells Regression	F Values for Adjusted Means
SCA Natural Sciences	53.36**	1.51
SCA Mathematics	91.97**	4.92*
d. f. per contrast	(2,297)	(1,297)

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* $p < .05$

** $p < .01$

TABLE U

Mean Changes in CSQ Scores from Entrance to College to the End of the Freshman Year [1]

	National Norm Group 1965	Hiram Old Curric. 68-69	Hiram New Curric. 69-70	Hiram New Curric. 70-71	Five Colleges 69-70
Family Independence	+2.2	+1.3	+1.1	+ .5	+ .9
Peer Independence	+ .6	+ .4	- .1	+ .2	+ .7
Liberalism	+1.0	+1.5	+3.3	+1.6	+ .9
Social Conscience	+ .6	+ .6	+2.0	+ .3	+ .6
Cultural Sophistication	+2.0	+1.3	+1.6	+2.0	+1.2

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[1] Individual CSQ scores range from 10 to 40, but most group means were in the twenties with standard deviation between three and six